



STIC Search Report

EIC 1700

STIC Database Tracking Number: 156321

TO: Dawn Garrett
Location: 10C79
Art Unit : 1774
June 24, 2005

Case Serial Number: 10/786372

From: Usha Shrestha
Location: EIC 1700
REMSSEN 4B28
Phone: 571/272-3519
usha.shrestha@uspto.gov

Search Notes

Access DB# 156821

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: DAWN GARRETT Examiner #: 76107 Date: 6/11/2005
 Art Unit: 1774 Phone Number 30 2-7523 Serial Number: 10/786 372
 Mail Box and Bldg/Room Location: Rm 10C79 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

 Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Electroluminescent Device Having Conjugated Arylamine Polymers

Inventors (please provide full names):
SHIYING ZHENG, KATHLEEN VAETH, QUANG PHAN

Earliest Priority Filing Date: 2/25/2004

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search the described arylamine-containing polymer wherein each of Ar, Ar₁, Ar₂, Ar₃ and Ar₄ are phenyl group

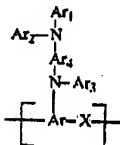
An electroluminescent device, comprising:

- a spaced-apart anode and cathode; and
- an organic layer disposed between the spaced-apart anode and cathode and including a polymer having arylamine repeating unit moiety represented by formula

SCIENTIFIC REFERENCE BR
 Sci & Tech Inf. Ctr.

JUN 14 RECD

Pat. & T.M. Office



wherein:

Ar, Ar₁, Ar₂, Ar₃, and Ar₄ are each individually aryl group of from 6 to 60 carbon atoms; or a heteroaryl group of from 4 to 60 carbons, or combinations thereof; or Ar₁ and Ar₂, Ar₃ and Ar₄, Ar₁ and Ar₄, Ar₂ and Ar₃ are connected through a chemical bond; and

X is a conjugated group having 2 to 60 carbon atoms.

STAFF USE ONLY

| | | |
|---|------------------------|-----------------------------------|
| Searcher: <u>Usha</u> | Type of Search | Vendors and cost where applicable |
| Searcher Phone #: _____ | NA Sequence (#) _____ | STN <u>87605-83</u> |
| Searcher Location: _____ | AA Sequence (#) _____ | Dialog _____ |
| Date Searcher Picked Up: <u>6/23/05</u> | Structure (#) <u>3</u> | Questel/Orbit _____ |
| Date Completed: <u>6/24/05</u> | Bibliographic _____ | Dr. Link _____ |
| Searcher Prep & Review Time: <u>60</u> | Litigation _____ | Lexis/Nexis _____ |
| Clerical Prep Time: <u>30</u> | Fulltext _____ | Sequence Systems _____ |
| Online Time: <u>90</u> | Patent Family _____ | WWW/Internet _____ |
| | Other _____ | Other (specify) _____ |

=> fil reg

FILE 'REGISTRY' ENTERED AT 14:30:06 ON 23 JUN 2005

=> d his ful

FILE 'LREGISTRY' ENTERED AT 13:19:28 ON 23 JUN 2005

L1 STR

FILE 'REGISTRY' ENTERED AT 13:21:03 ON 23 JUN 2005

L2 2 SEA SSS SAM L1
L3 SCR 1842
L4 SCR 1610
L5 50 SEA SSS SAM L1 AND L3 AND L4
D QUE STAT L5
L6 STR L1
L7 SCR 2043
L8 2 SEA SSS SAM L6 AND L7
D SCAN
D QUE STAT L8

FILE 'REGISTRY' ENTERED AT 13:50:46 ON 23 JUN 2005

L9 487 SEA SSS FUL L6 AND L7
SAV L9 GAR372/A

FILE 'HCAPLUS' ENTERED AT 13:52:37 ON 23 JUN 2005

L10 315 SEA ABB=ON PLU=ON L9
L11 186 SEA ABB=ON PLU=ON L10(L)DEV/RL
L12 186 SEA ABB=ON PLU=ON L11 AND (?LUMINES? OR LUMIN? OR
?LIGHT? OR ?EMIT? OR OLED? OR LED? OR EL? OR OEL?)
L13 162 SEA ABB=ON PLU=ON L11(L) (?LUMINES? OR LUMIN? OR
?LIGHT? OR ?EMIT? OR OLED? OR LED? OR EL? OR OEL?)
L14 56 SEA ABB=ON PLU=ON L13(L)PREP/RL

FILE 'REGISTRY' ENTERED AT 14:09:36 ON 23 JUN 2005

L15 STR
L16 3 SEA SUB=L9 SSS SAM L15
D SCAN
L17 STR
L18 4 SEA SUB=L9 SSS SAM L17
L19 73 SEA SUB=L9 SSS FUL L17
L20 61 SEA SUB=L9 SSS FUL L15

FILE 'HCAPLUS' ENTERED AT 14:18:49 ON 23 JUN 2005

L21 92 SEA ABB=ON PLU=ON L19
L22 39 SEA ABB=ON PLU=ON L20
L23 116 SEA ABB=ON PLU=ON L21 OR L22
L24 68 SEA ABB=ON PLU=ON L23(L)DEV/RL
L25 51 SEA ABB=ON PLU=ON L24(L) (?LUMINES? OR LUMIN? OR
?LIGHT? OR ?EMIT? OR OLED? OR LED? OR EL? OR OEL?)
L26 41 SEA ABB=ON PLU=ON L14 NOT L25
D FHITSTR

FILE 'REGISTRY' ENTERED AT 14:30:06 ON 23 JUN 2005

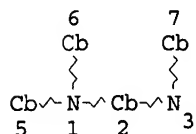
FILE LREGISTRY

LREGISTRY IS A STATIC LEARNING FILE

FILE HCAPLUS

=> d que 123

L6 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE

L7 SCR 2043

L9 487 SEA FILE=REGISTRY SSS FUL L6 AND L7

L15 STR

Cb~Ak

1 2

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 1

GGCAT IS UNS AT 2

DEFAULT ECLEVEL IS LIMITED

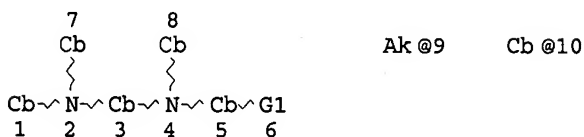
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 2

STEREO ATTRIBUTES: NONE

L17 STR



VAR G1=9/10

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 9

GGCAT IS UNS AT 10

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L19 73 SEA FILE=REGISTRY SUB=L9 SSS FUL L17

L20 61 SEA FILE=REGISTRY SUB=L9 SSS FUL L15

L21 92 SEA FILE=HCAPLUS ABB=ON PLU=ON L19

L22 39 SEA FILE=HCAPLUS ABB=ON PLU=ON L20
 L23 116 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 OR L22

=> fil hcap
 FILE 'HCAPLUS' ENTERED AT 14:31:19 ON 23 JUN 2005
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
 COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

=> d l25 1-51 ibib abs hitstr hitind

L25 ANSWER 1 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2005:472108 HCAPLUS
 TITLE: Preparation of crosslinkable substituted
 fluorene compound-based polymers for
 electroluminescent devices
 INVENTOR(S): Inbasekaran, Michael; Yu, Wanglin
 PATENT ASSIGNEE(S): Dow Global Technologies Inc., USA
 SOURCE: PCT Int. Appl., 23 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|--------------|
| WO 2005049548 | A1 | 20050602 | WO 2004-US36075 | 2004 1025 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
 KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
 MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,
 PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,
 TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,
 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,
 MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI,
 CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-520597P P
 2003
 1117

AB The present invention relates to novel 2, 7-di(arylamino)-
 substituted fluorenes that are further substituted at the
 9-position with ≥ 1 crosslinkable moieties and oligomers or
 polymers formed by crosslinking of said crosslinkable moieties
 used in forming solvent resistant films having use as interlayers
 in electronic devices, especially electroluminescent devices. Thus, 9 g
 2,7-dibromofluorenone and 25 mL anisole were reacted in the
 presence of methanesulfonic acid and mercaptoacetic acid, 6.0 g of
 the resulting 2,7-dibromo-9,9-di(4-methoxyphenyl)fluorene was
 reacted with 5.68 g diphenylamine in the presence of palladium
 acetate, tri-o-tolylphosphine, and potassium tert-butoxide,

treated with boron tribromide, etherified with 4-vinylbenzyl chloride to give 9,9-di[4-(4-vinylphenyl)methoxyphenyl]-2,7-bis(diphenylamino)-fluorene, 5% solution of which was spin-coated on a glass substrate, and heated at 180° for 30 min to give a xylene-insol. film emitting blue light under an UV-lamp, which was fabricated into a light emitting device as a hole-transport layer material, showing brightness 4000 cd/m² at 12 V.

IT 852691-97-5P

(optionally blend with polyamine; preparation of crosslinkable substituted fluorene compound-based polymers for electroluminescent devices)

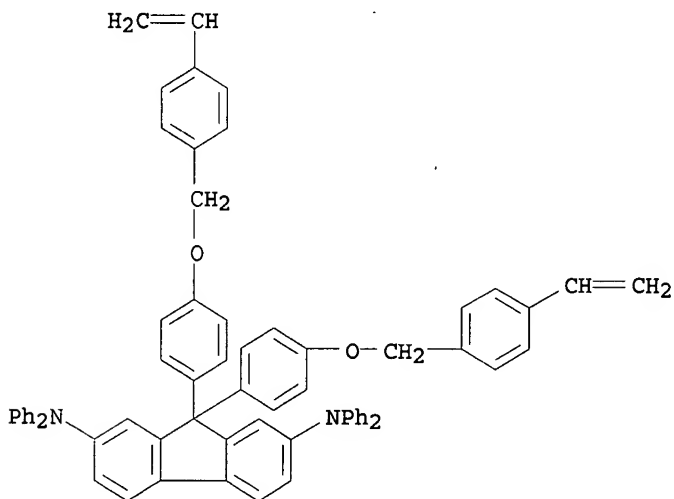
RN 852691-97-5 HCAPLUS

CN INDEX NAME NOT YET ASSIGNED

CM 1

CRN 852691-96-4

CMF C67 H52 N2 O2



IC ICM C07C217-94

ICS C08G061-02; H05B033-14; H01L051-30

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 73, 35

IT 852691-97-5P

(optionally blend with polyamine; preparation of crosslinkable substituted fluorene compound-based polymers for electroluminescent devices)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 2 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:450032 HCAPLUS

DOCUMENT NUMBER: 142:490343

TITLE: Electrophotographic apparatus, photoreceptors therefor, process cartridges therewith, and method for forming high-quality sharp images thereby

INVENTOR(S): Shibata, Toyoko; Sakimura, Tomoko; Yamazaki, Hiroshi; Asano, Masao
 PATENT ASSIGNEE(S): Konica Minolta Business Technologies, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 112 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 2005134514 | A2 | 20050526 | JP 2003-368608 | 2003 1029 |
| PRIORITY APPLN. INFO.: | | | JP 2003-368608 | 2003 1029 |

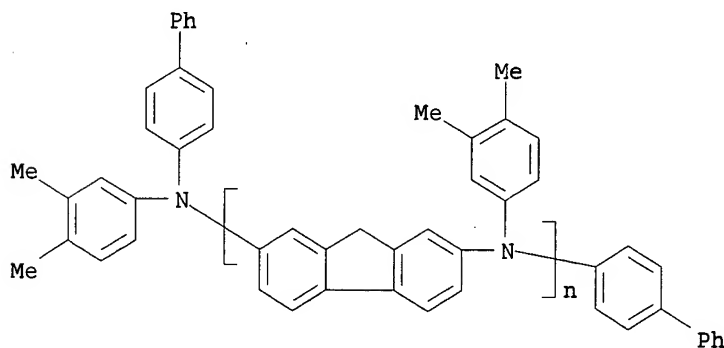
AB The photoreceptors contain (A) crosslinked siloxanes (containing other polymers, antioxidants, and/or charge-transporting components) and (B) X(CTM)nY mixts. (CTM = charge-transporting group; X, Y = H, halo, monovalent organic group; n = 0-10; with the proviso that when X = Y = H, n = 1-10) with x + y ≤ 99% (x, y = concentration of the maximum and the 2nd maximum components, resp.). Photoreceptors having charge-generating layers on conductive supports, B-containing charge-transporting layers thereon, and A-containing surface layers are also claimed. In process cartridges, the photoreceptors are held together with chargers, imagers, developers, transfer means, charge removers, and/or cleaning means.

IT 851957-25-0P

(oligomers, charge transporters; **electrophotog.**
 photoreceptors containing charge-transporting oligomers and crosslinked siloxanes for forming high-quality sharp images)

RN 851957-25-0 HCAPLUS

CN Poly[[(3,4-dimethylphenyl)imino]-9H-fluorene-2,7-diyl],
 α-[1,1'-biphenyl]-4-yl-α-[[1,1'-biphenyl]-4-yl(3,4-dimethylphenyl)amino]- (9CI) (CA INDEX NAME)



IC ICM G03G005-07

ICS G03G005-05; G03G005-147

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and

Other Reprographic Processes)
 Section cross-reference(s): 38
 IT 591-50-4DP, Iodobenzene, reaction products with
 m-diiodobenzene-2,4-dimethylaniline copolymer 27329-60-8DP,
 Diethyl diphenylmethylphosphonate, reaction products with
 dialdehyde-diphosphonate copolymer 31391-52-3DP, Iodobiphenyl,
 reaction products with bis(4-bromophenyl) ether-3,4-
 dimethylaniline copolymer 58922-31-9DP, reaction products with
 dialdehyde-diphosphonate copolymer 91861-56-2DP, reaction
 products with dialdehyde-diphosphonate copolymer 94788-29-1DP,
 reaction products with dialdehyde-diphosphonate copolymer
 208043-04-3DP, reaction products with dialdehyde-diphosphonate
 copolymer 313242-56-7DP, reaction products with di-Et
 3-phenyl-2-propenylphosphonate 767335-98-8DP, reaction products
 with di-Et diphenylmethylphosphonate 767336-00-5DP, reaction
 products with 2,4-dimethyl-4'-formyltriphenylamine 767336-02-7P
 767336-04-9P 767336-05-0P 851957-25-0P
 851957-27-2DP, reaction products with iodobenzene 851957-28-3DP,
 reaction products with iodobiphenyl 851957-29-4P
 (oligomers, charge transporters; electrophotog.
 photoreceptors containing charge-transporting oligomers and
 crosslinked siloxanes for forming high-quality sharp images)

L25 ANSWER 3 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:429235 HCAPLUS
 DOCUMENT NUMBER: 142:490132
 TITLE: Crosslinked polymer blends that include a
 luminescent polymer, and devices incorporating
 same
 INVENTOR(S): Casasanta, Vincenzo; Londergan, Timothy M.
 PATENT ASSIGNEE(S): USA
 SOURCE: U.S. Pat. Appl. Publ., 21 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 5
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|--------------|
| US 2005106417 | A1 | 20050519 | US 2003-714837 | 2003 1114 |
| WO 2005049680 | A2 | 20050602 | WO 2004-US37885 | 2004 1112 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
 KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
 MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,
 PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,
 TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,
 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT,
 LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG,
 CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-713469 A

2003
1114

US 2003-714266 A

2003
1114

US 2003-714356 A

2003
1114

US 2003-714387 A

2003
1114

US 2003-714837 A

2003
1114

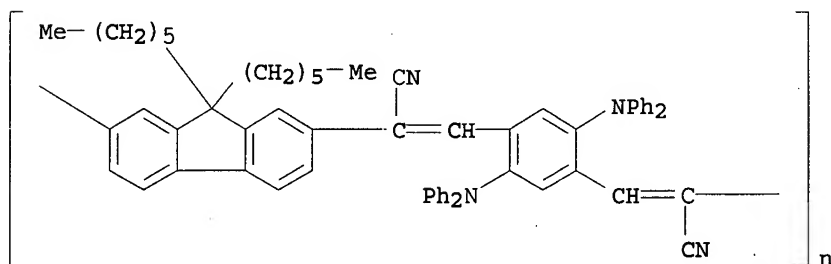
AB Crosslinked polymer blends that include a luminescent polymer.
Also featured are devices incorporating these blends.

IT 369370-71-8

(crosslinked polymer blends that include a luminescent polymer, and devices incorporating same)

RN 369370-71-8 HCAPLUS

CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl)(1-cyano-1,2-ethenediyl)[2,5-bis(diphenylamino)-1,4-phenylene](2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



IC ICM C09K011-06

ICS H05B033-14

INCL 428690000; 428917000; 252301350; 313504000; 313506000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38

IT 369370-71-8 851745-60-3 851955-88-9

(crosslinked polymer blends that include a luminescent polymer, and devices incorporating same)

L25 ANSWER 4 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:429234 HCAPLUS

DOCUMENT NUMBER: 142:490131

TITLE: Process for preparing crosslinked polymer blends that include a luminescent polymer

INVENTOR(S): Casasanta, Vincenzo; Londergan, Timothy M.

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 20 pp.

DOCUMENT TYPE: CODEN: USXXCO
 LANGUAGE: Patent
 FAMILY ACC. NUM. COUNT: 5 English
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|--------------|
| US 2005106416 | A1 | 20050519 | US 2003-714266 | 2003 1114 |
| WO 2005049680 | A2 | 20050602 | WO 2004-US37885 | 2004 1112 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
 KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
 MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,
 PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,
 TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,
 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT,
 LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG,
 CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

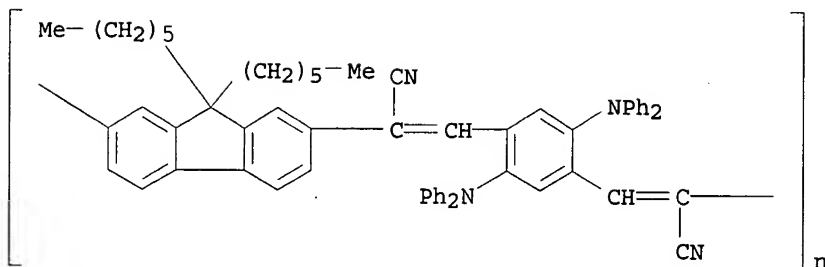
PRIORITY APPLN. INFO.: US 2003-713469 A 2003
 1114
 US 2003-714266 A 2003
 1114
 US 2003-714356 A 2003
 1114
 US 2003-714387 A 2003
 1114
 US 2003-714837 A 2003
 1114

AB A process comprising (a) providing a polymer blend comprising a
 luminescent polymer and a 2nd polymer, where at least one of the
 polymers is crosslinkable, and (b) crosslinking the crosslinkable
 polymer.

IT 369370-71-8
 (process for preparing crosslinked polymer blends that include a
 luminescent polymer)

RN 369370-71-8 HCAPLUS

CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl) (1-cyano-1,2-
 ethenediyl) [2,5-bis(diphenylamino)-1,4-phenylene] (2-cyano-1,2-
 ethenediyl)] (9CI) (CA INDEX NAME)



IC ICM C09K011-06

ICS C09K011-02

INCL 428690000; 428917000; 252301350; 252301160

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38

IT 369370-71-8 851745-60-3 851955-88-9

(process for preparing crosslinked polymer blends that include a luminescent polymer)

L25 ANSWER 5 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:223645 HCAPLUS

DOCUMENT NUMBER: 142:473478

TITLE: Morphological and electronic consequences of modifications to the polymer anode 'PEDOT:PSS'

AUTHOR(S): Snaith, Henry J.; Kenrick, Henry; Chiesa, Marco; Friend, Richard H.

CORPORATE SOURCE: Cavendish Laboratory, Cambridge, CB3 0HE, UK

SOURCE: Polymer (2005), 46(8), 2573-2578

CODEN: POLMAG; ISSN: 0032-3861

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

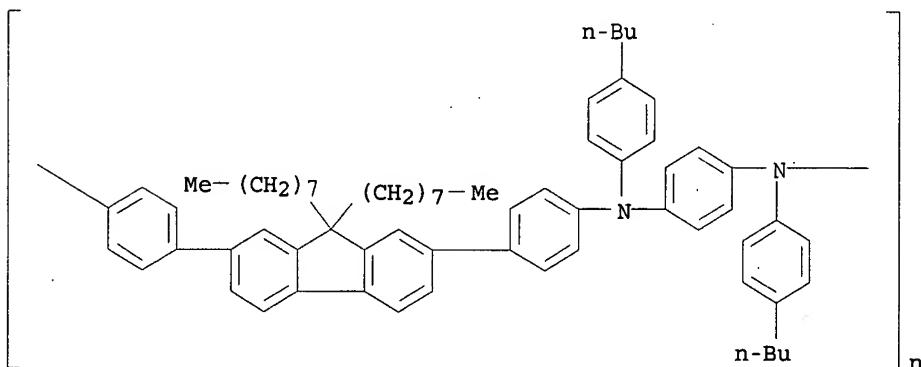
AB We present a microscopic and electronic investigation of the polymeric anode poly(3,4-ethylenedioxythiophene):poly(styrenesulfonate) (PEDOT:PSS) used as an electrode in photovoltaic and single carrier diodes. PEDOT:PSS is processed from aqueous solution as a colloidal dispersion with excess PSS present. We modify the PEDOT:PSS solution by the addition of a high b.p. alc., glycerol, which is known to increase the conductivity of the spin-coated film. Atomic force microscopy indicates swelling and greater aggregation of the PEDOT-rich colloidal particles found in this system. Current-voltage characteristics of hole-transporting diodes, formed with gold contacts, suggest less surface enrichment of PSS in the glycerol modified electrode. Through Kelvin probe microscopy, we find the surface potential of glycerol modified PEDOT:PSS decreases by approx. 0.12 eV, which we assign to a reduction in surface enrichment by PSS. Photovoltaic diodes, using a PFB:F8BT polymer blend as the photo-active layer, and glycerol modified PEDOT:PSS anodes are significantly improved as compared to those with unmodified PEDOT:PSS anodes. This is likely to be due to improved hole-injection from the active polymer film into the PEDOT:PSS anode. This emphasizes the electronic consequences of the morphol. reorientation of the PEDOT and PSS.

IT 223569-28-6, PFB

(hole conductor; morphol. and electronic consequences of modifications to polymer anode PEDOT:PSS)

RN 223569-28-6 HCAPLUS

CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-
1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene]
(9CI) (CA INDEX NAME)



CC 76-3 (Electric Phenomena)

Section cross-reference(s): 39, 52, 73

IT 223569-28-6, PFB

(hole conductor; morphol. and electronic consequences
of modifications to polymer anode PEDOT:PSS)

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L25 ANSWER 6 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:216255 HCAPLUS

DOCUMENT NUMBER: 142:287619

TITLE: Organic electroluminescent devices, their
manufacture, and electronic apparatus
therewith

INVENTOR(S): Morii, Katsuyuki; Takashima, Takeshi; Hokari,
Hirofumi; Makiura, Rie

PATENT ASSIGNEE(S): Seiko Epson Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-------------------|
| ----- | ---- | ----- | ----- | |
| JP 2005063892 | A2 | 20050310 | JP 2003-295297 | 2003 0819 |
| US 2005073249 | A1 | 20050407 | US 2004-916608 | 2004 0812 |
| PRIORITY APPLN. INFO.: | | | JP 2003-295297 | A 2003 0819 |

AB Electroluminescent devices including emitting layers wherein

USHA SHRESTHA EIC 1700 REM 4B28

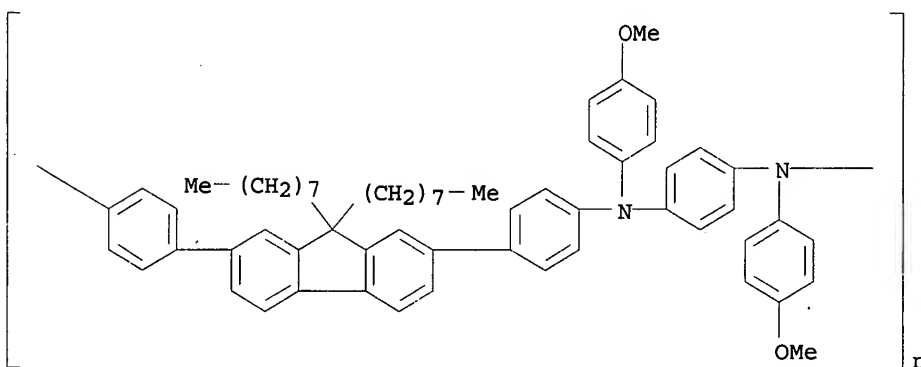
emitting guest materials (A) and hole-transporting host materials (B; e.g., triphenylamine-skeletoned polymers) are mixed, are claimed. The emitting layers may contain electron-transporting materials (C). To manufacture the devices, inks containing A, B, and optionally C are discharged through ink-jet printer heads to form layers. The anodes and cathodes of the devices may be also formed by jet printing. By optimizing host-guest relationship as above, high brightness and luminescent efficiency of organic LED are both achieved.

IT 223569-30-0

(emitting layers; organic LED containing hole-transporting host and emitting guest in emitting layers and showing high brightness)

RN 223569-30-0 HCAPLUS

CN Poly[[(4-methoxyphenyl)imino]-1,4-phenylene[(4-methoxyphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06; H05B033-10; H05B033-26

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

IT 195456-48-5, Poly(9,9-dioctyl-9H-fluorene-2,7-diyl) 210347-52-7
220797-16-0 223569-30-0 847267-48-5D, alkyl derivs.

(emitting layers; organic LED containing hole-transporting host and emitting guest in emitting layers and showing high brightness)

L25 ANSWER 7 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:58982 HCAPLUS

DOCUMENT NUMBER: 142:491232

TITLE: Using self-assembling dipole molecules to improve hole injection in conjugated polymers

AUTHOR(S): Khodabakhsh, Saghar; Poplavskyy, Dmytro; Heutz, Sandrine; Nelson, Jenny; Bradley, Donal D. C.; Murata, Hideyuki; Jones, Tim S.

CORPORATE SOURCE: Department of Chemistry Centre for Electronic Materials and Devices, Imperial College, London, SW7 2AZ, UK

SOURCE: Advanced Functional Materials (2004), 14(12), 1205-1210

CODEN: AFMDC6; ISSN: 1616-301X

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
 DOCUMENT TYPE: Journal
 LANGUAGE: English

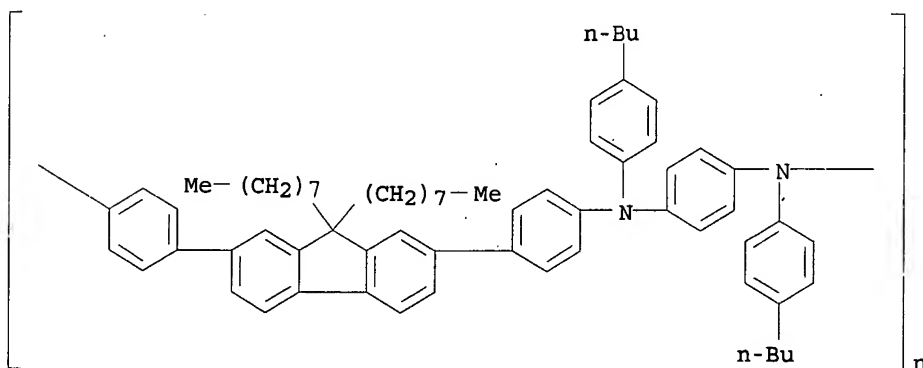
AB Surface modification of indium-tin-oxide (ITO)-coated substrates through the use of self-assembled monolayers (SAMs) of mols. with permanent dipole moment was used to control the ITO work function and device performance in polymer light-emitting diodes based on poly(9,9-dioctylfluorene-co-bis-N,N'-4-butylphenyl-bis-N,N'-phenyl-1,4-phenylenediamine) (PFB), a polyfluorene hole transporting copolymer. The SAM compds. include 4-chlorobenzoyl chloride (CBC), 4-chlorobenzenesulfonyl chloride (CBS), and 4-chlorophenyldichlorophosphate, with 4-methoxybenzoic acid (MBA) used for comparison. Measured current-voltage characteristics of the devices reveal greatly increased hole injection current from the SAM-altered electrodes with higher work function, in agreement with an expected reduction in the barrier for hole injection. In particular, the SAM-modified electrode with the highest work function provides an ohmic contact for hole injection into the polymer. Injection from the widely used poly(2,3-ethylenedioxythiophene)/polystyrenesulfonic acid (PEDOT:PSS)-coated ITO anode system, is less efficient compared with some of the studied SAM-coated ITO anodes despite the significantly higher work function measured by a Kelvin probe. This apparently anomalous situation is attributed to the inhomogeneities in the injection processes that occur over the area of the device when the PEDOT:PSS-coated ITO electrode is used.

IT 223569-28-6

(hole transport layer in LED; self-assembled permanent dipole mol. monolayer to improve hole injection of polyfluorene layer and work function of ITO in LEDs)

RN 223569-28-6 HCAPLUS

CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 76-3 (Electric Phenomena)
 Section cross-reference(s): 36, 73

IT 223569-28-6

(hole transport layer in LED; self-assembled permanent dipole mol. monolayer to improve hole injection of polyfluorene layer and work function of ITO in LEDs)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L25 ANSWER 8 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:1121204 HCAPLUS

DOCUMENT NUMBER: 142:382942

TITLE: Comparative measurements of charge transport
in semiconducting polymers and their devices
AUTHOR(S): Rawcliffe, Ruth; Bradley, Donal D. C.;
Campbell, Alasdair J.

CORPORATE SOURCE: Imperial College London, London, UK
SOURCE: Proceedings of SPIE-The International Society
for Optical Engineering (2004), 5519(Organic
Light-Emitting Materials and Devices VIII),
89-99

CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical
Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

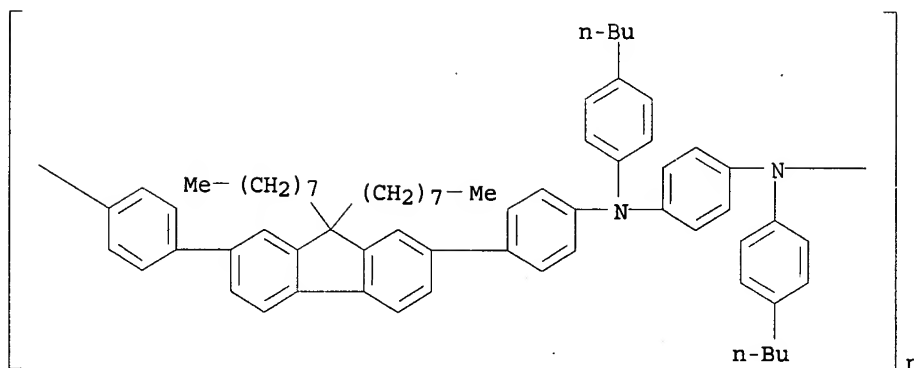
AB Semiconducting polymers can be used in light-emitting-diodes (LEDs), photovoltaics (PVs), and field-effect-transistors (FETs). In all of these devices charge carrier transport is a major issue, the mobility being directly related to device performance. In LEDs and PVs, charge transport occurs vertically through a bulk semiconducting polymer film. This bulk mobility is determined by the average interchain hopping distance a , the polaron relaxation energy λ , the level of energetic and spatial disorder σ and Σ , the presence of charge traps and different structural phases. In FETs, charge transport occurs horizontally along the interface between the semiconducting polymer film and the insulating material. The FET mobility is also determined by the above parameters but these may be different from the bulk. Also, there are addnl. factors such as surface features which have to be circumnavigated, specific interface trap states, and the high charge carrier densities effectively filling all the deep sites. Here we present results looking at the difference between the bulk mobility, as measured by time-of-flight (TOF) photocurrent, vs. the FET mobility, as measured by the FET transfer characteristics. Three different polyfluorene copolymers are investigated. In all three materials, the room temperature hole TOF bulk mobility was found to be greater than the FET mobility. This indicates that models based on deep site filling due to the high FET carrier densities cannot be correct. Temperature measurements also show that the level of energetic disorder σ in the FETs is the same or less than that in the bulk, as is the polaron relaxation energy λ or thermal activation energy of any deep traps. The results instead indicate that it is the average interchain hopping distance which is greater at the insulator-semiconductor interface in FETs than in the bulk films, and it is this which is responsible for the difference in mobility.

IT 223569-28-6 223569-30-0

(comparative measurements of charge transport in semiconducting polymers with its usage in light-emitting diodes, photovoltaics and field-effect-transistors)

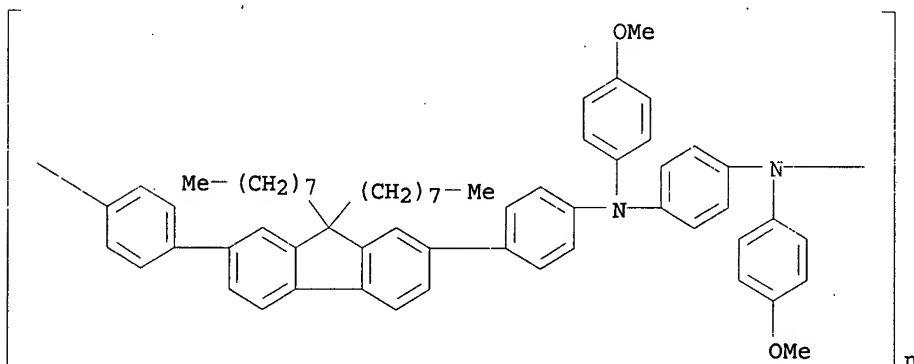
RN 223569-28-6 HCAPLUS

CN Poly[[4-butylphenyl]imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene(9CI) (CA INDEX NAME)



RN 223569-30-0 HCAPLUS

CN Poly[[[4-methoxyphenyl imino]-1,4-phenylene[(4-methoxyphenyl imino)-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)]



CC 76-3 (Electric Phenomena)

Section cross-reference(s): 36

IT 210347-56-1 223569-28-6 223569-30-0

(comparative measurements of charge transport in semiconducting polymers with its usage in light-emitting diodes, photovoltaics and field-effect-transistors)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 9 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:1024438 HCAPLUS

DOCUMENT NUMBER: 142:166545

TITLE: Photovoltaic devices fabricated from an aqueous dispersion of polyfluorene nanoparticles using an electroplating method

AUTHOR(S): Snaith, Henry J.; Friend, Richard H.

CORPORATE SOURCE: Cavendish Laboratory, Cambridge, CB3 0HE, UK

SOURCE: Synthetic Metals (2004), 147(1-3), 105-109

CODEN: SYMEDZ; ISSN: 0379-6779

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal
LANGUAGE: English

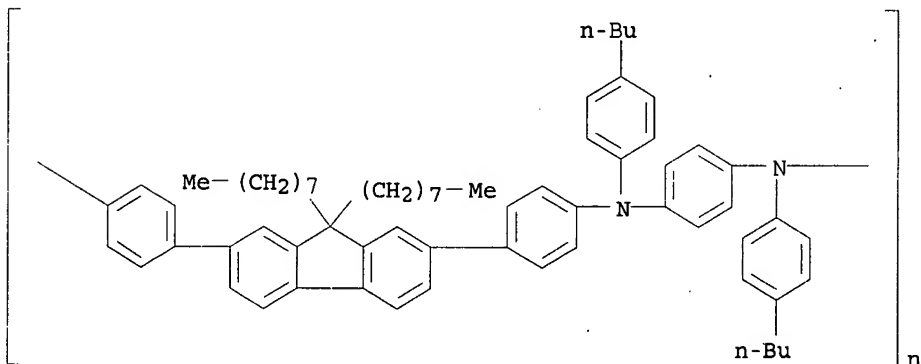
AB We report microscopic and device based anal. of thin films of polyfluorene nanoparticles. We use an electroplating technique to form a complete monolayer of polymer nanoparticles on conductive and polymer-coated substrates. We find the electroplated film to be insol. in organic solvents, and thus are able to build up multilayer structures of electroactive polymers which are originally soluble in common solvents. By spin-coating an F8BT layer from an organic solvent on top of a PFB:F8BT nanoparticle film, we form a multilayer structure. Capping with an aluminum cathode produces a photovoltaic device with substantial performance characteristics.

IT 223569-28-6, PFB

(photovoltaic devices fabricated from an aqueous dispersion of polyfluorene nanoparticles using an **electroplating** method)

RN 223569-28-6 HCAPLUS

CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 76-5 (Electric Phenomena)

Section cross-reference(s): 38, 52

IT 210347-52-7, F8BT 223569-28-6, PFB

(photovoltaic devices fabricated from an aqueous dispersion of polyfluorene nanoparticles using an **electroplating** method)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 10 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:943091 HCAPLUS

DOCUMENT NUMBER: 142:97314

TITLE: Near-Field Scanning Photocurrent Measurements of Polyfluorene Blend Devices: Directly Correlating Morphology with Current Generation

AUTHOR(S): McNeill, Christopher R.; Frohne, Holger; Holdsworth, John L.; Dastoor, Paul C.

CORPORATE SOURCE: School of Mathematical and Physical Sciences, The University of Newcastle, Callaghan, 2308, Australia

SOURCE: Nano Letters (2004), 4(12), 2503-2507
 CODEN: NALEFD; ISSN: 1530-6984
 PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English

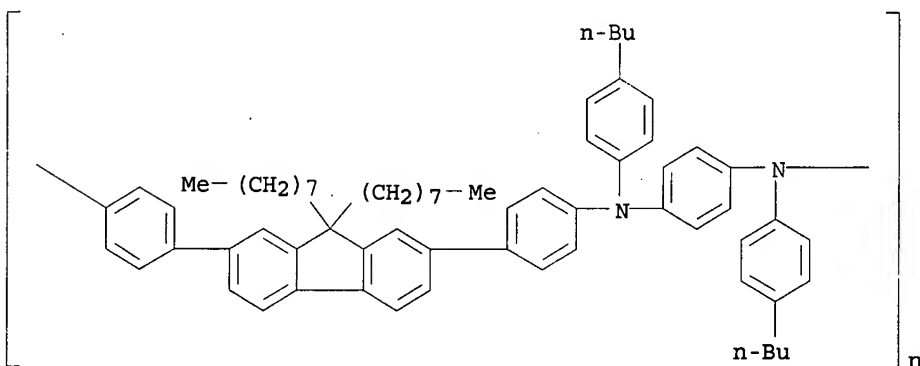
AB Near-field scanning photocurrent microscopy (NSPM) measurements probing the relationship between morphol. and current generation in photovoltaic devices based on poly(9,9'-dioctylfluorene-co-bis-N,N'-(4-butylphenyl)-bis-N,N'-phenyl-1,4-phenylene-diamine) [PFB] and poly(9,9'-dioctylfluorene-co-benzo-thiadiazole) [F 8BT] blend films are presented. The polymers were spin coated from p-xylene solution. Current generation occurred primarily from within the micron-sized phase-segregated domains, with the PFB-rich phase contributing significantly more current than the surrounding F8BT-rich regions. These results are explained by nanoscale intermixing within the micron-sized domains, with differing extents of intermixing in the PFB- and F8BT-rich domains.

IT 223569-28-6

(thin film; direct correlation of film morphol. with elec. current generation from solar cells and photovoltaic cells with polyfluorene blend thin films)

RN 223569-28-6 HCAPLUS

CN Poly[[[4-butylphenyl]imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 38

IT 210347-52-7, F 8BT 223569-28-6

(thin film; direct correlation of film morphol. with elec. current generation from solar cells and photovoltaic cells with polyfluorene blend thin films)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 11 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:857833 HCAPLUS

DOCUMENT NUMBER: 141:340150

TITLE: Organic electroluminescent device and manufacturing method

INVENTOR(S): Hirayama, Yasuko; Sano, Takeshi; Sakakibara, Takahisa

PATENT ASSIGNEE(S): Sanyo Electric Co. Ltd., Japan
 SOURCE: PCT Int. Appl., 75 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

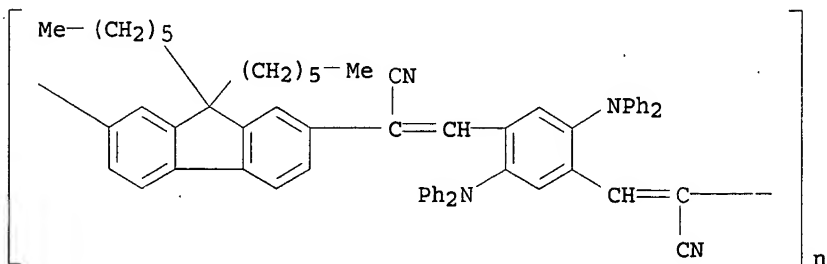
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|-------------------|
| WO 2004089043 | A1 | 20041014 | WO 2004-JP4104 | 2004 0324 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| JP 2004319440 | A2 | 20041111 | JP 2004-55397 | 2004 0227 |
| JP 2004319441 | A2 | 20041111 | JP 2004-55398 | 2004 0227 |
| PRIORITY APPLN. INFO.: | | | JP 2003-97308 | A 2003 0331 |
| | | | JP 2004-55397 | A 2004 0227 |

AB An organic electroluminescent device is formed by stacking a plurality of layers, each of which is composed of a polymer material which is soluble to an organic solvent. The polymer material used for a foundation layer has a larger mol. weight than the polymer material used for a layer formed on the foundation layer. The organic solvent into which the polymer material for the foundation layer is dissolved has a larger relative dielec. constant than the organic solvent into which the polymer material for the upper layer is dissolved. When the foundation layer serves as a light-emitting layer and the upper layer serves as an electron-transporting layer, the electron-transporting layer may preferably contain a polymer material having hole-blocking properties. In such a case where the foundation layer serves as the light-emitting layer and the upper layer serves as the electron-transporting layer, it is also preferable that repeating units of the polymer material of the light-emitting layer and those of the polymer material of the electron-transporting layer have the same skeletons.

IT 369370-71-8

(organic electroluminescent device and manufacturing method)

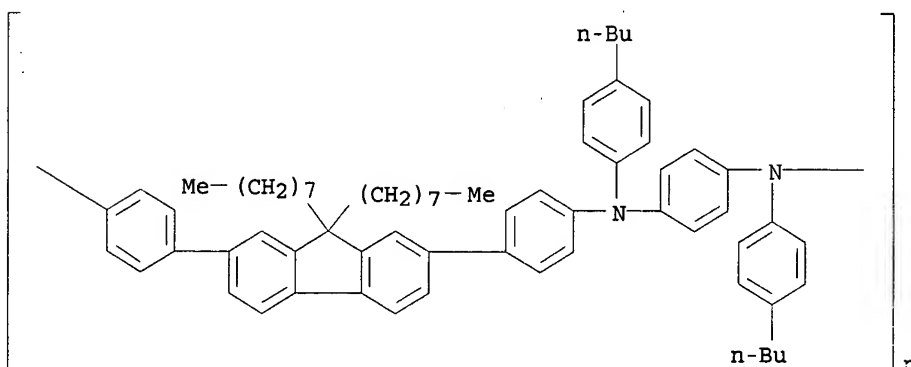
RN 369370-71-8 HCAPLUS
 CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl) (1-cyano-1,2-ethenediyl) [2,5-bis(diphenylamino)-1,4-phenylene] (2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



IC ICM H05B033-14
 ICS H05B033-10; H05B033-22; C09K011-06; C08L065-00
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 38, 76
 IT 25067-59-8 49718-51-6 126213-51-2 138184-36-8, MEH-PPV
 195456-48-5, Poly(9,9-dioctyl-9H-fluorene-2,7-diyl) 316825-94-2
 369370-71-8 474975-19-4 475101-36-1 738610-65-6
 773895-96-8 773895-97-9 773895-98-0
 (organic electroluminescent device and manufacturing method)
 REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L25 ANSWER 12 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2004:793745 HCAPLUS
 DOCUMENT NUMBER: 142:13573
 TITLE: Electromodulation of photoinduced charge transfer in polyfluorene bilayer devices
 AUTHOR(S): Dhoot, A. S.; Hogan, J. A.; Morteani, A. C.; Greenham, N. C.
 CORPORATE SOURCE: Cavendish Laboratory, Cambridge, CB3 0HE, UK
 SOURCE: Applied Physics Letters (2004), 85(12), 2256-2258
 CODEN: APPLAB; ISSN: 0003-6951
 PUBLISHER: American Institute of Physics
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Photoinduced charge transfer at a conjugated polymer donor-acceptor heterojunction controls the ultimate photogeneration efficiency in photovoltaic devices. The authors have studied this charge transfer by measurements of elec.-field-induced photoluminescence (PL) modulation in polyfluorene-based bilayer devices at room and low temps. Depending on the field direction across the interface we observe field-induced quenching or enhancement of the PL, which we ascribe to modulation of the exciton dissociation rate through modification of the energy of the charge-transfer state formed after charge separation
 IT 223569-28-6, PFB
 (electromodulation of photoinduced charge transfer in polyfluorene bilayer devices)
 RN 223569-28-6 HCAPLUS

CN Poly[[(4-butylphenyl) imino] -1,4-phenylene [(4-butylphenyl) imino] -1,4-phenylene (9,9-dioctyl-9H-fluorene-2,7-diyl) -1,4-phenylene] (9CI) (CA INDEX NAME)



CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 36, 52, 73, 76

IT 210347-52-7, F8BT 223569-28-6, PFB
(electromodulation of photoinduced charge transfer in
polyfluorene bilayer devices)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L25 ANSWER 13 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:719315 HCAPLUS

TITLE: Polymer blend LEDs using polyfluorene copolymers and thermally cross-linked fluoropolymers

AUTHOR(S) : Casasanta, Vincenzo; Londergan, Timothy; Dinu, Raluca

CORPORATE SOURCE: Lumera Corp., Bothell, WA, 98011, USA

SOURCE: Proceedings of SPIE-The International Society
for Optical Engineering (2004), 5351(Organic
Photonic Materials and Devices VI), 217-225
CODEN: PSISDG; ISSN: 0277-786X

PUBLISHER: SPIE-The International Society for Optical Engineering

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The use of conjugated light emitting polymers (LEPs) blended in nonconjugated matrixes offers an enhancement in electroluminescence efficiency in polymer light emitting diodes (PLEDs) since the aggregate quenching of the excited state emission is ameliorated. In such a scheme the matrix polymer may be developed to enhance the thermal, mech., and processing properties of the LEP blend as a whole. The authors produced solution processable blends of polyfluorene (PF) based copolymers with thermally crosslinkable perfluoroarylether (PFAE) polymers and tested these materials' performance as a single emissive layer in the simplest PLED structure. Specifically the authors present results of blends consisting of red poly[[9,9-dihexyl-2,7-bis(1-cyanovinylene)fluorenyl-ene}-alt-co-{2,5-bis(N,N'-diphenylamino)-

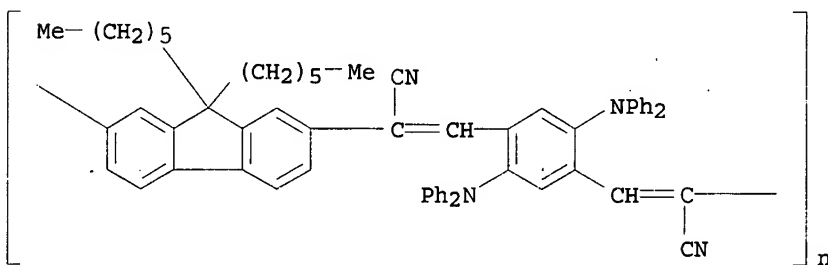
1,4-phenylene}} as the LEP and a novel PFAE which is thermally crosslinked as the matrix. The new PFAE was specifically developed for low optical loss, high glass transition temperature (T_g), and solution process-ability. Once spun cast and thermally crosslinked, films of these polymer blends show increased solvent resistance and enhanced T_g due to the fluoropolymer matrix. Simple ITO/polymer/Al PLEDs of several concentration ratios are fabricated and tested to determine the efficacy of various matrix addns. The light-c.d.-voltage characteristics show either equivalent or enhanced efficiency depending on LEP/PFAE concentration. Blends of the PFAE and PF copolymer LEPs are patterned into 6 μ m waveguide structures using the solvent resistance afforded by the crosslinked PFAE matrix.

IT 369370-71-8

(polymer blend LEDs using polyfluorene copolymers and thermally cross-linked fluoropolymers)

RN 369370-71-8 HCAPLUS

CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl) (1-cyano-1,2-ethenediyl) [2,5-bis(diphenylamino)-1,4-phenylene] (2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 369370-71-8 579505-60-5 851955-85-6

(polymer blend LEDs using polyfluorene copolymers and thermally cross-linked fluoropolymers)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT.

L25 ANSWER 14 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:530380 HCAPLUS

DOCUMENT NUMBER: 141:96344

TITLE: Organic electroluminescent device for displays and illumination source and its production method

INVENTOR(S): Kita, Hiroshi; Yamada, Taketoshi; Suzurizato, Yoshiyuki; Ueda, Noriko

PATENT ASSIGNEE(S): Konica Minolta Holdings Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 65 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

USHA SHRESTHA EIC 1700 REM 4B28

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 37, 74

IT 714976-00-8 714976-02-0 714976-05-3 714976-08-6
 714976-11-1 714976-13-3 714976-16-6 714976-18-8
 714976-21-3 714976-25-7 714976-27-9 714976-29-1
 714976-31-5 714976-33-7 714976-35-9 714976-36-0
 714976-38-2

(organic electroluminescent device having phosphorescent dopant and multifunctioning polymer in light emitting layer)

L25 ANSWER 15 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:495621 HCAPLUS

DOCUMENT NUMBER: 141:61845

TITLE: Organic electroluminescence device

INVENTOR(S): Seki, Mieko; Yoneyama, Hiroto; Okuda, Daisuke; Hirose, Eiichi; Ozaki, Tadayoshi; Agata, Takeshi; Ishii, Toru; Mashimo, Kiyokazu; Sato, Katsuhiko

PATENT ASSIGNEE(S): Fuji Xerox Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 116 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|--------------|
| JP 2004171858 | A2 | 20040617 | JP 2002-334871 | 2002 1119 |

PRIORITY APPLN. INFO.: JP 2002-334871

2002
1119

AB The invention relates to an organic electroluminescent device comprising the charge transporting polyester having the partial structure represented by - (T)l(O)n-C6H4N(Ar)X[N(Ar)C6H4]k(O)n(T)l- and - (T)l(O)n-C6H4C6H4N(Ar)X[N(Ar)C6H4C6H4]k(O)n(T)l- [Ar = Ph, 2-10 ring polynuclear aromatic, 2-10 ring condensed aromatic, etc.; X = divalent aromatic group derived from anthracene, tetracene, pyrene, etc.; k n l = 0 and 1; T = C1-6 normal chain hydrocarbons and C2-10 branched hydrocarbons].

IT 705274-71-1P 705275-35-0P
 (charge transporting polyester for organic electroluminescence device)

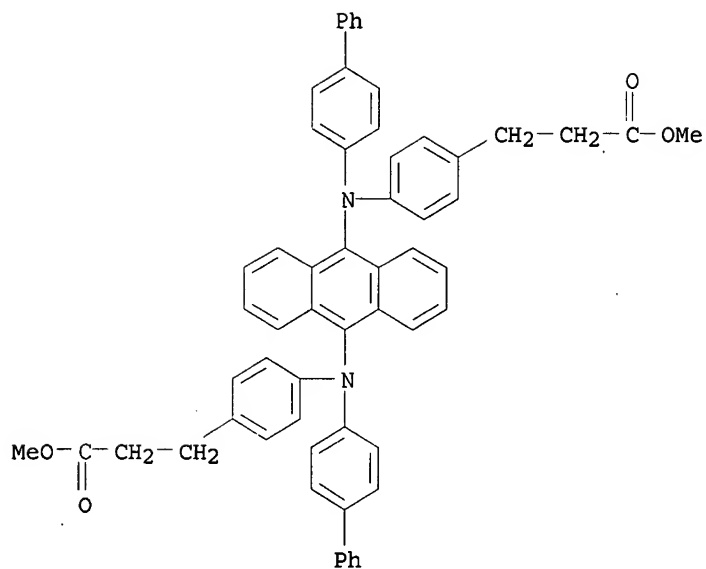
RN 705274-71-1 HCAPLUS

CN Benzenepropanoic acid, 4,4'-[9,10-anthracenediylbis([1,1'-biphenyl]-4-ylimino)]bis-, dimethyl ester, polymer with 1,2-ethanediol (9CI) (CA INDEX NAME)

CM 1

CRN 705274-70-0

CMF C58 H48 N2 O4



CM 2

CRN 107-21-1

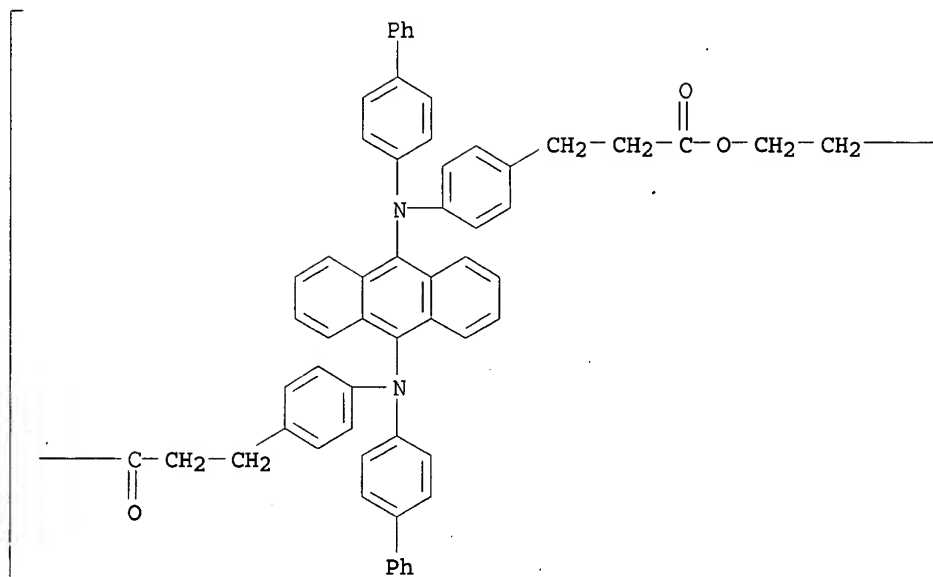
CMF C2 H6 O2

HO-CH₂-CH₂-OH

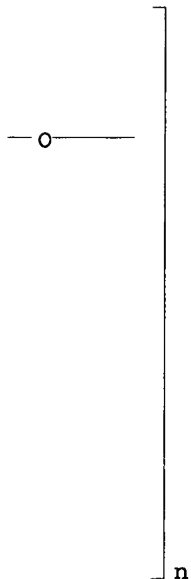
RN 705275-35-0 HCAPLUS

CN Poly[oxy-1,2-ethanediyl oxy(1-oxo-1,3-propanediyl)-1,4-phenylene([1,1'-biphenyl]-4-ylimino)-9,10-anthracenediyl([1,1'-biphenyl]-4-ylimino)-1,4-phenylene(3-oxo-1,3-propanediyl)] (9CI)
(CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM H05B033-14
ICS C08G063-68; H05B033-22; C09K011-06
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

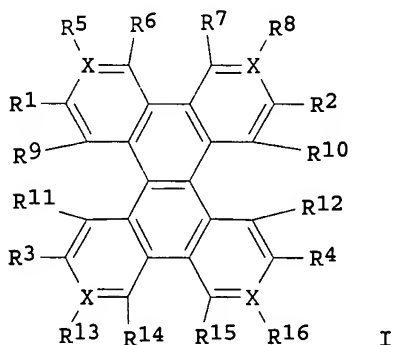
USHA SHRESTHA EIC 1700 REM 4B28

Section cross-reference(s): 35
 IT 705274-71-1P 705274-74-4P 705274-77-7P 705274-80-2P
 705274-82-4P 705274-85-7P 705274-87-9P 705275-35-0P
 (charge transporting polyester for organic
 electroluminescence device)

L25 ANSWER 16 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2004:451525 HCAPLUS
 DOCUMENT NUMBER: 141:30834
 TITLE: Organic light-emitting device based on
 crosslinkable spiro-type conjugated compounds
 INVENTOR(S): Li, Xiao-Chang Charles
 PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan
 SOURCE: U.S. Pat. Appl. Publ., 13 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-------------------|
| US 2004106004 | A1 | 20040603 | US 2002-308099 | 2002 1203 |
| US 6830833 | B2 | 20041214 | | |
| JP 2004182737 | A2 | 20040702 | JP 2003-403748 | 2003 1202 |
| PRIORITY APPLN. INFO.: | | | US 2002-308099 | A 2002 1203 |

OTHER SOURCE(S): MARPAT 141:30834
 GI



AB The title spiro-type conjugated compds. represented by general formula I (X = C, N; R1-16 = H, D, alkyl, alkoxy, silyl, aromatic ring, fused aromatic ring, heteroarom. ring, fused heteroarom. ring, diarylamino, carbazole; at least one of R1-16 is crosslinkable group consisting of vinyl double bond or azide group) are useful in the fabrication of organic light emitting devices.

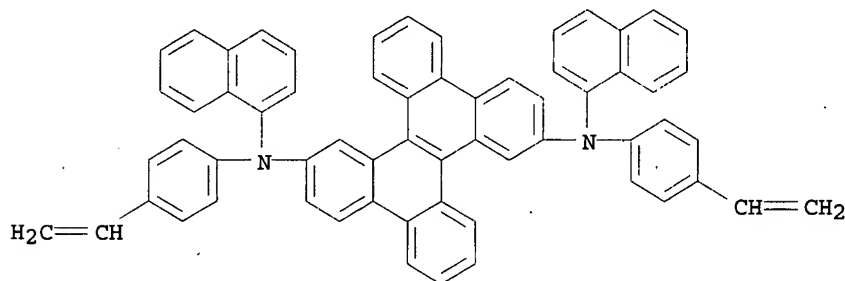
```

IT      697763-40-9P
        (crosslinked spiro-type conjugated compds. as hole transport
        materials for organic light-emitting device)
RN      697763-40-9 HCAPLUS
CN      Dibenzo[g,p]chrysene-2,10-diamine, N,N'-bis(4-ethenylphenyl)-N,N'-
        di-1-naphthalenyl-, homopolymer (9CI) (CA INDEX NAME)

CM      1

CRN     697763-39-6
CMF     C62 H42 N2

```



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IC      ICM  H05B033-14
      ICS  C09K011-06
INCL  428690000; 428917000; 313504000; 313506000; 546041000; 564426000;
      564429000; 556431000; 556432000
CC      73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
      Properties)
      Section cross-reference(s): 24, 27, 28, 74
IT      697763-40-9P
      (crosslinked spiro-type conjugated compds. as hole transport
      materials for organic light-emitting device)
REFERENCE COUNT:      20      THERE ARE 20 CITED REFERENCES AVAILABLE
      FOR THIS RECORD. ALL CITATIONS AVAILABLE
      IN THE RE FORMAT

```

L25 ANSWER 17 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:219366 HCAPLUS
DOCUMENT NUMBER: 140:278198
TITLE: Organic electroluminescent device
INVENTOR(S): Okuda, Daisuke; Seki, Mieko; Yoneyama, Hiroto;
Hirose, Eiichi; Ozaki, Tadayoshi; Agata,
Takashi; Ishii, Toru; Mashimo, Kiyokazu; Sato,
Katsuhiko
PATENT ASSIGNEE(S): Fuji Xerox Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 42 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----------------|------|----------|-----------------|------|
| ----- ----- | --- | ----- | ----- | |
| JP 2004087372 | A2 | 20040318 | JP 2002-248676 | |

USHA SHRESTHA EIC 1700 REM 4B28

PRIORITY APPLN. INFO.:

JP 2002-248676

2002
08282002
0828

AB The invention relates to an organic electroluminescent device comprising the charge transporting polyurethane containing the partial structure represented by $-C_6H_4-N(Ar)X[N(Ar)C_6H_4]_k-$ and $-C_6H_4-C_6H_4-N(Ar)X[N(Ar)C_6H_4-C_6H_4]_k-$ [X = divalent aromatic group; k = 0 or 1; Ar = $Ar_1C(R_1)=C(R_2)-(-Ar_2-C(R_3)=C(R_4)-)n-Ar_3-$ and $Ar_1-C.tplbond.C-(-Ar_2-C.tplbond.C-)n-Ar_3-$ [Ar1-3 = benzene ring, and 2-10 ring aromatic hydrocarbons; R1-4 = H, alkyl, alkoxy, etc.; n = 0-10 integer]].

IT 672941-56-9 672941-57-0

(organic electroluminescent device comprising charge transporting polyurethane)

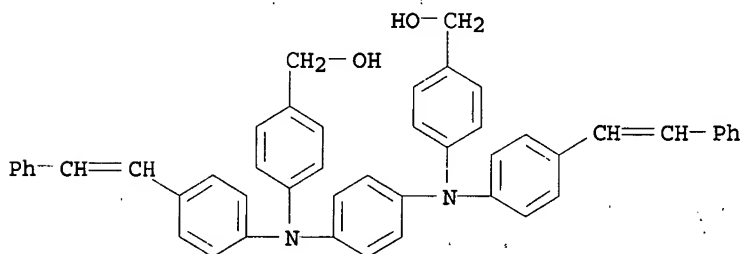
RN 672941-56-9 HCAPLUS

CN Benzenemethanol, 4,4'-[1,4-phenylenebis[[4-(2-phenylethenyl)phenyl]imino]]bis-, polymer with 1,6-diisocyanatohexane (9CI) (CA INDEX NAME)

CM 1

CRN 672941-55-8

CMF C48 H40 N2 O2



CM 2

CRN 822-06-0

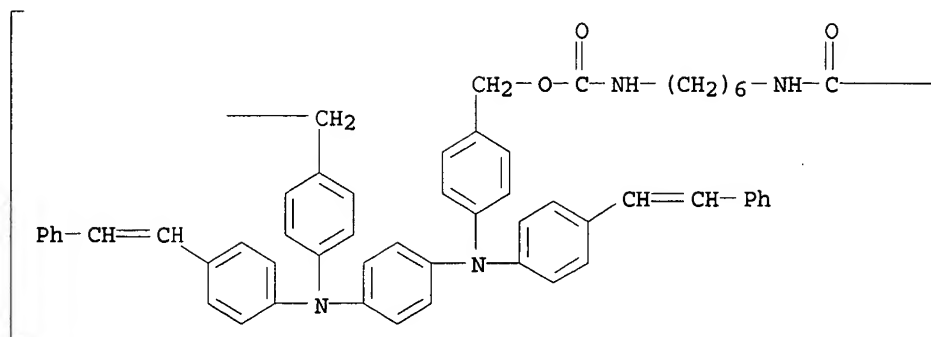
CMF C8 H12 N2 O2

OCN-(CH₂)₆-NCO

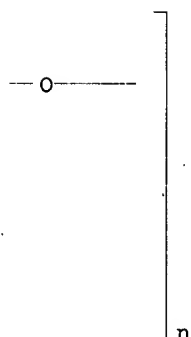
RN 672941-57-0 HCAPLUS

CN Poly[oxy carbonylimino-1,6-hexanediyliminocarbonyloxymethylene-1,4-phenylene[[4-(2-phenylethenyl)phenyl]imino]-1,4-phenylene[[4-(2-phenylethenyl)phenyl]imino]-1,4-phenylenemethylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM H05B033-14
 ICS C08G018-32; C08G018-78; C09K011-06; H05B033-22
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 37, 74
 IT 672941-56-9 672941-57-0 672941-59-2
 672941-60-5 672941-62-7 672941-63-8
 (organic electroluminescent device comprising charge transporting polyurethane)

L25 ANSWER 18 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:77079 HCAPLUS

DOCUMENT NUMBER: 140:136192

TITLE: Organic electroluminescent device

INVENTOR(S): Hirose, Eiichi; Yoneyama, Hiroto; Okuda, Daisuke; Seki, Mieko; Ozaki, Tadayoshi; Agata, Takashi; Ishii, Toru; Mashimo, Kiyokazu; Sato, Katsuhiro

PATENT ASSIGNEE(S): Fuji Xerox Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 47 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

USHA SHRESTHA EIC 1700 REM 4B28

PATENT INFORMATION:

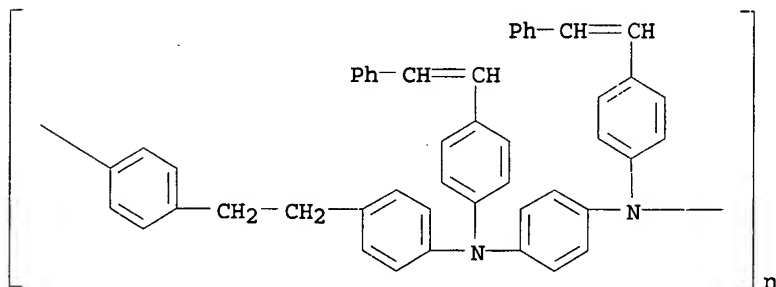
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| ----- | --- | ----- | ----- | ----- |
| JP 2004030942 | A2 | 20040129 | JP 2002-181030 | 2002 0621 |
| PRIORITY APPLN. INFO.: | | | JP 2002-181030 | 2002 0621 |

AB The invention relates to an organic electroluminescent device comprising the charge transporting polyether represented by $R-O-[A-O]_p-R$, [R = H, alkyl, aryl, and aralkyl; A = $-TmC_6H_4N(Ar)X[N(Ar)C_6H_4]_kTm-$ and $-TmC_6H_4-C_6H_4N(Ar)X[N(Ar)C_6H_4]_kTm-$ [X = phenylene, monovalent polycyclic aroms., monovalent condensed aromatic hydrocarbon, and monovalent aromatic heterocyclic; T = divalent hydrocarbon chain (C1-6), and divalent branched hydrocarbon (C2-10); m = 0-3 integer, k = 0 or 1; Ar = $Ar1R1C:C(R3)[Ar2C(R3):C(R4)]_nAr3-$ and $Ar1CC[Ar2CC]_n-Ar3-$ [Ar1 = Ph, monovalent polycyclic aroms. hydrocarbon, etc.; Ar2-4 = phenylene, divalent polycyclic aromatic hydrocarbon, etc.; and R1-4 = H, alkyl, cyano, etc.; n = 0-10 integer]]; p = 5-5,000 integer].

IT 651048-26-9 651048-29-2 651048-30-5
(charge transporting material for organic electroluminescent device)

RN 651048-26-9 HCAPLUS

CN Poly[[[4-(2-phenylethenyl)phenyl]imino]-1,4-phenylene[[4-(2-phenylethenyl)phenyl]imino]-1,4-phenylene-1,2-ethanediyl-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 651048-29-2 HCAPLUS

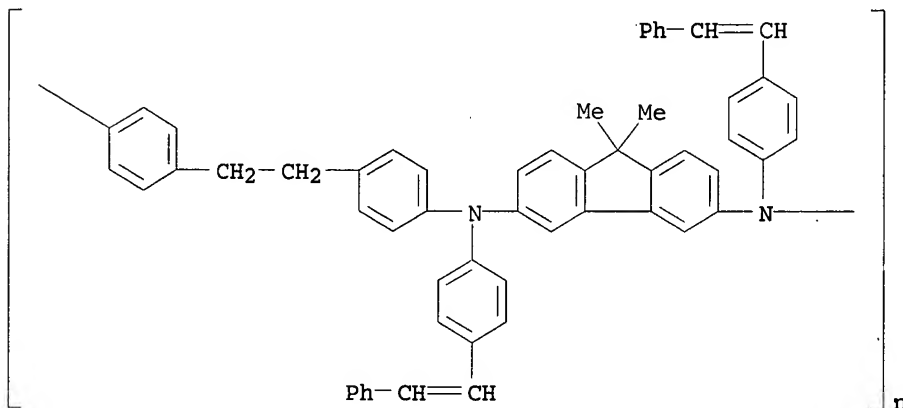
CN Poly[[[4-(2-phenylethenyl)phenyl]imino]-1,4-naphthalenediyl[[4-(2-phenylethenyl)phenyl]imino]-1,4-phenylene-1,2-ethanediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

*

RN 651048-30-5 HCAPLUS
 CN Poly[[[4-(2-phenylethenyl)phenyl]imino] (9,9-dimethyl-9H-fluorene-3,6-diyl) [[4-(2-phenylethenyl)phenyl]imino]-1,4-phenylene-1,2-ethanediyl-1,4-phenylene] (9CI) (CA INDEX NAME)



IC ICM H05B033-14
 ICS C09K011-06; H05B033-22
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 38
 IT 651048-26-9 651048-27-0 651048-28-1
 651048-29-2 651048-30-5 651048-31-6
 651048-32-7
 (charge transporting material for organic electroluminescent device)

L25 ANSWER 19 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:988088 HCAPLUS

DOCUMENT NUMBER: 141:113985

TITLE: Inkjet printing of light-emitting polymer displays

AUTHOR(S): Shimoda, Tatsuya; Morii, Katsuyuki; Seki, Shunichi; Kiguchi, Hiroshi

CORPORATE SOURCE: Technology Platform Research Center, Seiko-Epson Corp., Fujimi-machi, Suwa-gun, Nagano-ken, 339-0293, Japan

SOURCE: MRS Bulletin (2003), 28(11), 821-827

CODEN: MRSBEA; ISSN: 0883-7694

PUBLISHER: Materials Research Society

DOCUMENT TYPE: Journal

LANGUAGE: English

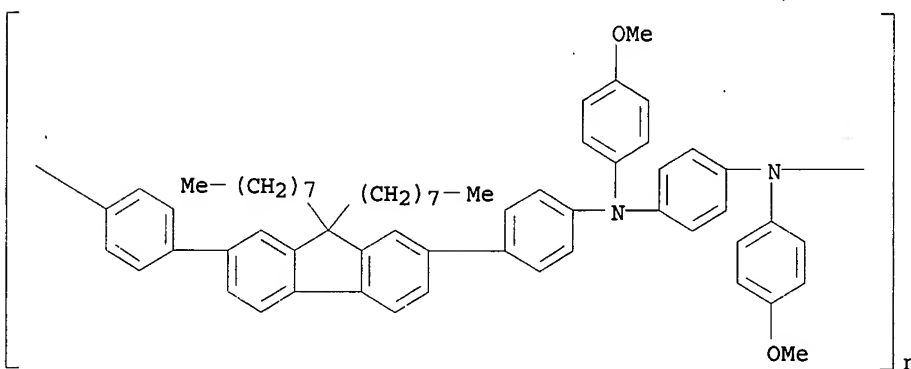
AB Based on the concept of a microliquid process, we have developed an organic electroluminescent display using conductive polymers, including light-emitting polymers. The technol. of inkjet printing has progressed enough to be used for the microliquid process. First, we describe the process used to form a patterned thin film. This involves inkjet-related technologies, the self-patterning behavior of a microliquid on the substrate, and the drying process that defines the thickness profile and film properties. Some microliquid behaviors and related phenomena, along with properties of the resulting film, were identified as

distinct from those coming from a macroscopic liquid, as a result of size effects. By fully utilizing these unique properties of microliquids, we have succeeded in fabricating color-pixel arrays by direct patterning of polymer solns. As a result, an organic electroluminescent display with a vivid full-color image was developed.

IT 223569-30-0
(PFMO; inkjet printing of light-emitting polymer displays)

RN 223569-30-0 HCAPLUS

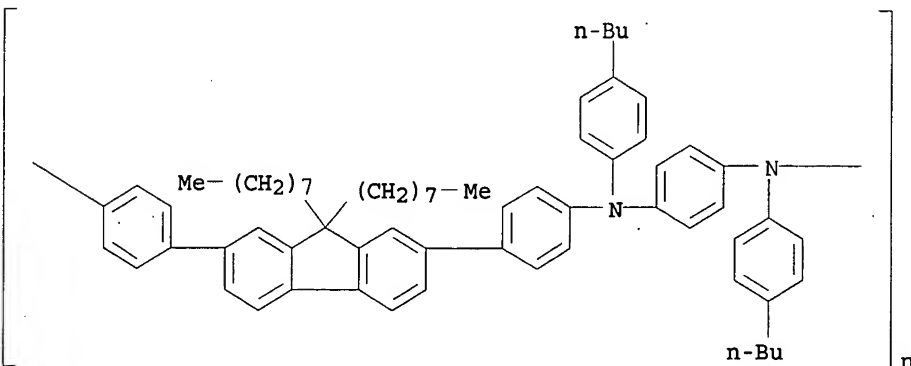
CN Poly[[(4-methoxyphenyl) imino] -1,4-phenylene [(4-methoxyphenyl) imino] -1,4-phenylene (9,9-dioctyl-9H-fluorene-2,7-diyl) -1,4-phenylene] (9CI) (CA INDEX NAME)



IT 223569-28-6
(TFB; inkjet printing of light-emitting polymer displays)

RN 223569-28-6 HCAPLUS

CN Poly[[(4-butylphenyl) imino] -1,4-phenylene [(4-butylphenyl) imino] -1,4-phenylene (9,9-dioctyl-9H-fluorene-2,7-diyl) -1,4-phenylene] (9CI) (CA INDEX NAME)



CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 76

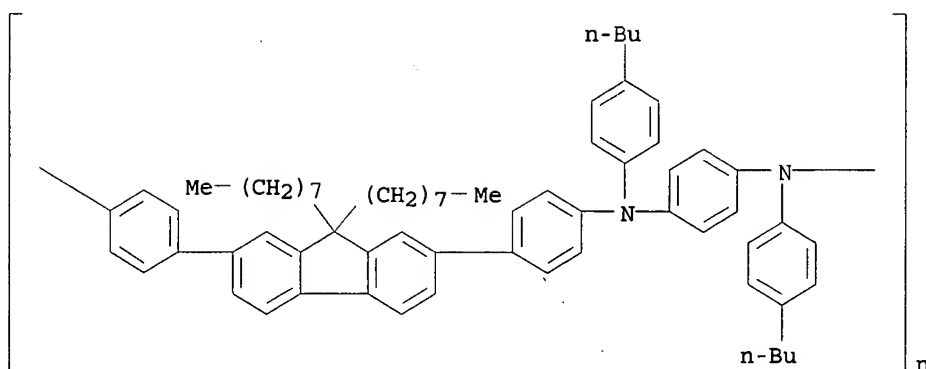
IT 223569-30-0

(PFMO; inkjet printing of light-emitting
polymer displays)
IT 223569-28-6
(TFB; inkjet printing of light-emitting
polymer displays)
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L25 ANSWER 20 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:894763 HCAPLUS
DOCUMENT NUMBER: 140:136062
TITLE: Barrier-free electron-hole capture in polymer
blend heterojunction light-emitting diodes
AUTHOR(S): Morteani, Arne C.; Dhoot, Anoop S.; Kim,
Ji-seon; Silva, Carlos; Greenham, Neil C.;
Murphy, Craig; Moons, Ellen; Cina, Salvatore;
Burroughes, Jeremy H.; Friend, Richard H.
CORPORATE SOURCE: Cavendish Laboratory, University of Cambridge,
Cambridge, CB3 0HE, UK
SOURCE: Advanced Materials (Weinheim, Germany) (2003),
15(20), 1708-1712
CODEN: ADVMEW; ISSN: 0935-9648
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new mechanism in heterojunction light-emitting diodes (LEDs),
called reverse photo-induced charge transfer, allows barrier-free
electron-hole capture, giving low voltage, high efficiency
operation of polymer blend diodes. The trapping of the exciton at
the heterojunction to form a spectroscopically distinct state
provides direct evidence for this process. Electrons and holes
are confined to the electron- and hole-transporting
semiconductors, resp., and that this is desirable for long-lived
device operation. These device structures and device operation
mechanisms allow efficient LEDs to be processed conveniently.
This novel mechanism was applied to evaluate the properties of 2
different type II heterojunction systems: blends of
poly(9,9'-dioctylfluorene-co-N-(4-butylphenyl)diphenylamine) with
poly(9,9'-dioctylfluorene-co-benzothiadiazole) (F8BT) and blends
of poly(9,9'-dioctylfluorene-co-bis-N,N'-(4-butylphenyl)-bis-N,N'-
phenyl-1,4-phenylenediamine) with F8BT.

IT 223569-28-6
(barrier-free electron-hole capture in polymer blend
heterojunction LEDs containing)
RN 223569-28-6 HCAPLUS
CN Poly[[[4-butylphenyl]imino]-1,4-phenylene[(4-butylphenyl)imino]-
1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene]
(9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38, 76

IT 210347-52-7, Poly(9,9'-dioctylfluorene-co-benzothiadiazole)

220797-16-0 223569-28-6

(barrier-free electron-hole capture in polymer blend heterojunction LEDs containing)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L25 ANSWER 21 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:756523 HCAPLUS

DOCUMENT NUMBER: 140:33370

TITLE: Photochemical patterning approaches for multicolor polymer light emitting devices

AUTHOR(S): Pogantsch, A.; Trattinig, G.; Rentenberger, S.;
Langer, G.; Keplinger, J.; Tillmann, H.;
Hoerhold, H.-H.; Scherf, U.; Kern, W.; Zojer,
E.

CORPORATE SOURCE: Institute of Solid State Physics, Graz
University of Technology, Graz, A-8010,
Austria

SOURCE: Materials Research Society Symposium
Proceedings (2003), 771(Organic and Polymeric
Materials and Devices), 307-312
CODEN: MRSPDH; ISSN: 0272-9172

PUBLISHER: Materials Research Society

DOCUMENT TYPE: Journal

LANGUAGE: English

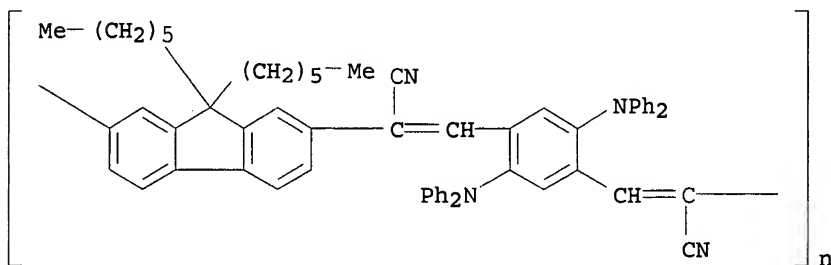
AB The patterning of conjugated polymers for multicolored electroluminescence applications is a current topic of research in polymer device technol. Several techniques including direct writing approaches such as ink-jet printing may solve this challenge. The authors present an approach to tuning the (electro)luminescence color of a film consisting of a blend of conjugated polymers after its deposition by UV-irradiation in the presence of an active agent. This promises to be an alternative, highly parallel approach towards multicolored electroluminescence.

IT 369370-71-8

(photochem. patterning approaches for multicolor polymer light emitting devices)

RN 369370-71-8 HCAPLUS

CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl) (1-cyano-1,2-ethenediyl) [2,5-bis(diphenylamino)-1,4-phenylene] (2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 123864-00-6, 9,9-Di(octyl)fluorene homopolymer 138184-36-8, MEH
PPV 188201-14-1 369370-71-8 475101-36-1

(photochem. patterning approaches for multicolor polymer
light emitting devices)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L25 ANSWER 22 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:715941 HCAPLUS

DOCUMENT NUMBER: 139:252274

TITLE: Organic electroluminescent device comprising
electron transporting polyether

INVENTOR(S): Hirose, Eiichi; Seki, Mieko; Yoneyama, Hiroto;
Okuda, Daisuke; Ozaki, Tadayoshi; Agata,
Takashi; Ishii, Toru; Mashimo, Kiyokazu; Sato,
Katsuhiro

PATENT ASSIGNEE(S): Fuji Xerox Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 32 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-------------------|
| ----- | ---- | ----- | ----- | ----- |
| JP 2003257669 | A2 | 20030912 | JP 2002-60558 | 2002 0306 |
| US 2004018384 | A1 | 20040129 | US 2003-377672 | 2003 0304 |
| PRIORITY APPLN. INFO.: | | | JP 2002-60558 | A 2002 0306 |

AB The invention refers to an electroluminescent device comprising
the structure -Tm-C6H4-N(Ar)-X[N(Ar)-C6H4]k-Tm- or
-Tm-C6H4-C6H4-N(Ar)X[N(Ar)-C6H4-C6H4]k-Tm- [Ar = (un) substituted

benzene, univalent multinuclear aromatic hydrocarbon, univalent condensed aromatic hydrocarbon, or univalent heterocycle; X = (un)substituted divalent multinuclear aromatic hydrocarbon, divalent condensed aromatic hydrocarbon, divalent multinuclear heterocycle, divalent multinuclear aromatic hydrocarbon containing a heterocycle, or unsubstituted divalent condensed aromatic hydrocarbon containing a heterocycle; T = C1-6 divalent straight chain or C2-10 branched hydrocarbon; m = 1 - 3; k = 0, 1] of an electron transport polyether in at least one of the organic layers.

IT 597551-00-3

(organic electroluminescent device comprising
electron transporting polyether)

RN 597551-00-3 HCAPLUS

CN Poly([1,1'-biphenyl]-4-ylimino)-1,4-naphthalenediyl([1,1'-biphenyl]-4-ylimino)-1,4-phenylene-1,2-ethanediyl-1,4-phenylene]
(9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

IC ICM H05B033-14

ICS C09K011-06; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 597550-98-6 597550-99-7 597551-00-3 597551-01-4

597551-02-5 597551-03-6

(organic electroluminescent device comprising
electron transporting polyether)

L25 ANSWER 23 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:559879 HCAPLUS

DOCUMENT NUMBER: 139:124780

TITLE: Copolymers having aromatic amine repeating units, their compositions, and light-emitting diodes and devices

INVENTOR(S): Suzuki, Tomoyuki; Doi, Shuji; Noguchi, Kiminobu

PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| JP 2003206335 | A2 | 20030722 | JP 2002-7167 | 2002 0116 |
| PRIORITY APPLN. INFO.: | | | | 2002 |
| | | | | JP 2002-7167 |

USHA SHRESTHA EIC 1700 REM 4B28

0116

AB The copolymers have (A) ≥ 1 stilbenzyl units $Ar_1CR_1:CR_2Ar_2$ (Ar_1, Ar_2 = arylene, divalent heterocyclic group; R_1, R_2 = H, alkyl, alkoxy, alkylthio, alkylsilyl, alkylamino, aryl, aryloxy, arylsilyl, arylamino, arylalkyl, arylalkoxy, arylalkylsilyl, arylalkylamino, arylalkenyl, arylalkynyl, monovalent heterocyclic group, cyano) and (B) ≥ 1 aromatic amine units $Ar_3Ar_4NAr_5(NAr_6Ar_7)_n$ (Ar_3, Ar_5, Ar_7 = arylene, divalent heterocyclic group; Ar_4, Ar_6 = aryl, monovalent heterocyclic group; $n = 0-3$). The compns. comprise the copolymers and polymers, giving fluorescence at solid states, with polystyrene-based number-average mol. weight 103-108. Light-emitting diodes, surface light sources, displays, and liquid-crystal displays using the copolymers are also claimed. The copolymers show high fluorescent intensity.

IT 565227-14-7P

(copolymers having aromatic amine units with high fluorescent intensity for LED)

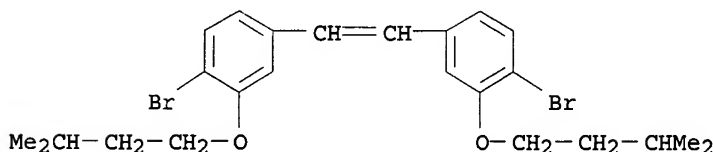
RN 565227-14-7 HCAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-, polymer with N,N-bis(4-bromophenyl)-4-[2-[4-(1,1-dimethylethyl)phenyl]ethenyl]benzenamine and 1,1'-(1,2-ethenediyl)bis[4-bromo-3-(3-methylbutoxy)benzene] (9CI) (CA INDEX NAME)

CM 1

CRN 565227-11-4

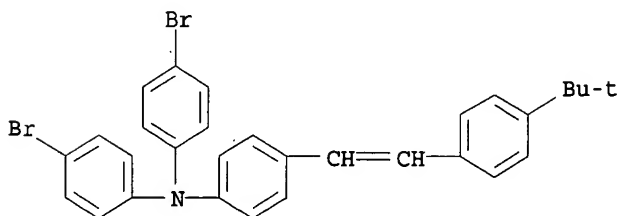
CMF C24 H30 Br2 O2



CM 2

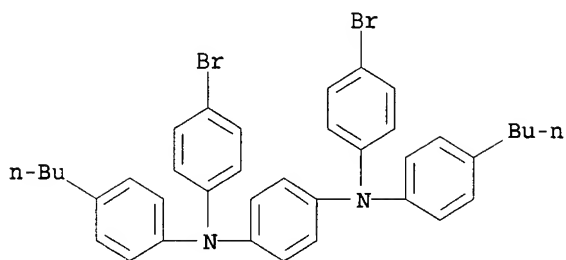
CRN 474787-40-1

CMF C30 H27 Br2 N



CM 3

CRN 372200-89-0
CMF C38 H38 Br2 N2



IC ICM C08G061-00
ICS C08L065-00; C08L101-12; C09K011-06; G02F001-1335; H05B033-14;
H05B033-22
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)
Section cross-reference(s): 38, 74
IT 565227-12-5P 565227-13-6P **565227-14-7P**
(copolymers having aromatic amine units with high fluorescent
intensity for LED)

L25 ANSWER 24 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:490609 HCAPLUS

DOCUMENT NUMBER: 139:204250

TITLE: Conjugated polymer blends: Linking film
morphology to performance of light emitting
diodes and photodiodes

AUTHOR(S): Moons, Ellen

CORPORATE SOURCE: Department of Physics, Division for
Engineering Sciences, Physics and Mathematics,
Karlstad University, Karlstad, 65188, Swed.

SOURCE: Journal of Physics: Condensed Matter (2002),
14(47), 12235-12260

CODEN: JCOMEL; ISSN: 0953-8984

PUBLISHER: Institute of Physics Publishing

DOCUMENT TYPE: Journal; General Review

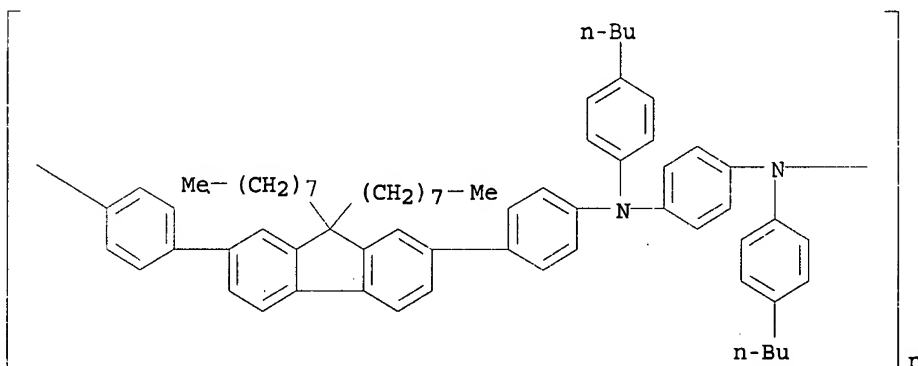
LANGUAGE: English

AB A review. Blending is a technique known in polymer technol. that takes advantage of the processibility of polymers to produce new solid materials or composites with specific structural and phys. properties, distinct from the ones of their components. In thin films of polymer blends interesting morphologies are formed because of phase separation. For conjugated polymers, i.e. solution-processible semiconductors, blending also opens a way to optimize the performance of opto-electronic devices, bringing about technol. benefits. It is therefore crucial to achieve understanding of the effect film morphol. has on the device performance, and, ultimately, to achieve control over the phase separation in a blend, so that structures can be designed that yield the desired device performance. Light-emitting diodes (LEDs) made of polymer blends showed strongly enhanced electroluminescence (EL) efficiencies, as compared to pure homopolymers. Color conversion, white light emission, polarized light emission, emission line narrowing, and voltage-tunable colors are other effects that were observed in blends containing light-emitting polymers.

IT 223569-28-6, PFB

RN 223569-28-6 HCAPLUS

CN Poly[[4-(4-butylphenyl) imino]-1,4-phenylene[(4-butylphenyl) imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



Section cross-reference(s): 38, 66, 76

IT 223569-28-6, PFB

(PFB; relationship between polymer blend film morphol. and performance of **light emitting diodes** and photodiodes)

REFERENCE COUNT: 186 THERE ARE 186 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L25 ANSWER 25 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:381297 HCAPLUS

DOCUMENT NUMBER: 138:345750

TITLE: Conjugated polymers containing arylamine for
light-emitting diodes

AUTHOR(S) : Shi, Jianmin; Zheng, Shiyong

CORPORATE SOURCE: Eastman Kodak Co., Rochester, NY, 14650, USA

SOURCE: Polymeric Materials Science and Engineering
(2001), 84, 473-474

CODEN: PMSEDG; ISSN: 0743-0515

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

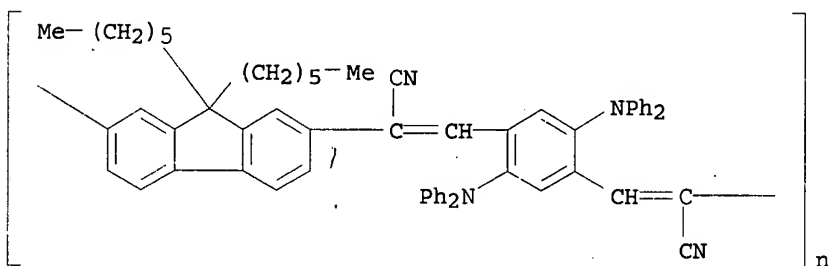
LANGUAGE: English

AB The authors report the synthesis and characterization of 5 polymers (P1-P5) with arylamine pendants. Various aromatic groups, were incorporated into polymers to fine tune the optoelectronic properties and long side chains were introduced to increase solubility. 9,10-Diphenylanthracene is a highly fluorescent and efficient chromophore and was incorporated into P2. Strong electron withdrawing groups such as CN increase the electron affinity of PPV polymers and facilitate electron injection, so P3 was designed based on this approach. The synthesis of the polymers, their absorption and photoluminescence in solution were reported. Single-layer ITO/polymer/Mg:Ag devices were fabricated from spin-coated polymer thin films and characterized.

IT 369370-71-8P 369370-72-9P 380498-80-6P
(synthesis, absorption and photoluminescence properties of conjugated polymers containing arylamine for light-emitting diodes)

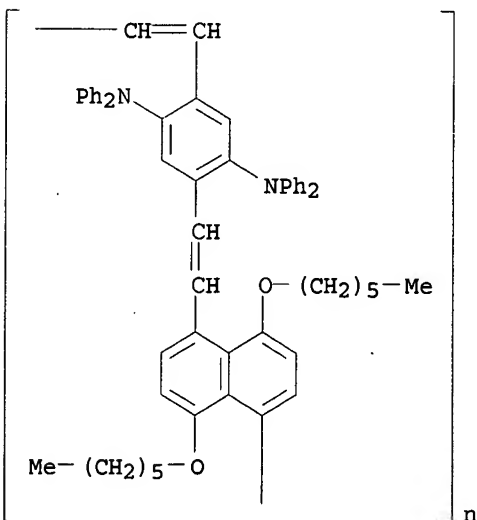
RN 369370-71-8 HCAPLUS

CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl) (1-cyano-1,2-ethenediyl) [2,5-bis(diphenylamino)-1,4-phenylene] (2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



RN 369370-72-9 HCAPLUS

CN Poly[[4,8-bis(hexyloxy)-1,5-naphthalenediyl]-1,2-ethenediyl [2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



RN 380498-80-6 HCAPLUS
CN Poly[[2,6-bis(octyloxy)-9,10-anthracenediyl]-1,4-phenylene-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
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CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36, 37, 76

IT 369370-71-8P 369370-72-9P 369385-54-6P
369385-63-7P 380498-80-6P

(synthesis, absorption and photoluminescence properties of conjugated polymers containing arylamine for light-emitting diodes)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 26 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:880789 HCAPLUS

DOCUMENT NUMBER: 138:244989

TITLE: Polymer-based red, green, and blue emitting devices fabricated by reductive photopatterning

AUTHOR(S): Trattnig, Gernot; Pogantsch, Alexander; Langer, Gregor; Kern, Wolfgang; Zojer, Egbert
CORPORATE SOURCE: Institut f. Festkorperphysik, Technische Universitat Graz, Graz, A-8010, Austria

SOURCE: Applied Physics Letters (2002), 81(22), 4269-4271

CODEN: APPLAB; ISSN: 0003-6951

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

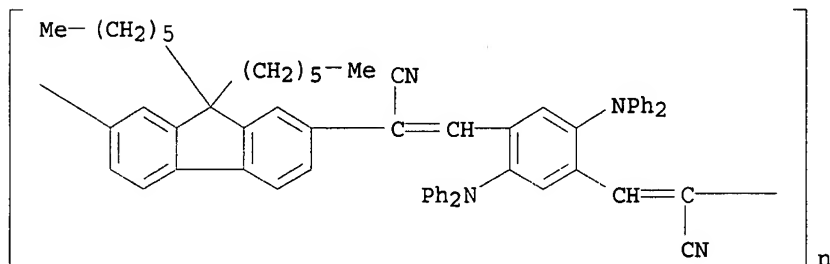
LANGUAGE: English

AB Using a color tuning approach reliant on reductive photopatterning, we present red-green-blue electroluminescence from a single layer polymer light-emitting device. To be able to cover the full color range, we employ a single emissive layer consisting of a blue emitter (the host polymer), as well as green and red emitting guest polymers. The energy transfer between the host and the various guest compds. is tuned via a reductive photoinitiated process in the presence of gaseous hydrazine. This process is compatible with regular film casting techniques such as spin coating, and therefore can be regarded as a promising alternative to the more complex, traditional patterning approaches.

IT 369370-71-8

(red-emitter; polymer-based red, green, and blue emitting devices fabricated by reductive photopatterning using UV irradiation in hydrazine atmospheric)

RN 369370-71-8 HCAPLUS
 CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl) (1-cyano-1,2-ethenediyl) [2,5-bis(diphenylamino)-1,4-phenylene] (2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36, 38, 76

IT 369370-71-8

(red-emitter; polymer-based red, green, and blue emitting devices fabricated by reductive photopatterning using UV irradiation in hydrazine atmospheric)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 27 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:814503 HCAPLUS

DOCUMENT NUMBER: 137:317691

TITLE: Optoelectronic devices and a method for producing the same

INVENTOR(S): MacKenzie, J. Devin; Arias, Ana Claudia; Friend, Richard Henry; Huck, Wilhelm

PATENT ASSIGNEE(S): Cambridge University Technical Services Limited, UK

SOURCE: PCT Int. Appl., 32 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|------|
| WO 2002084758 | A1 | 20021024 | WO 2002-GB1723 | |

2002
0412

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,

USHA SHRESTHA EIC 1700 REM 4B28

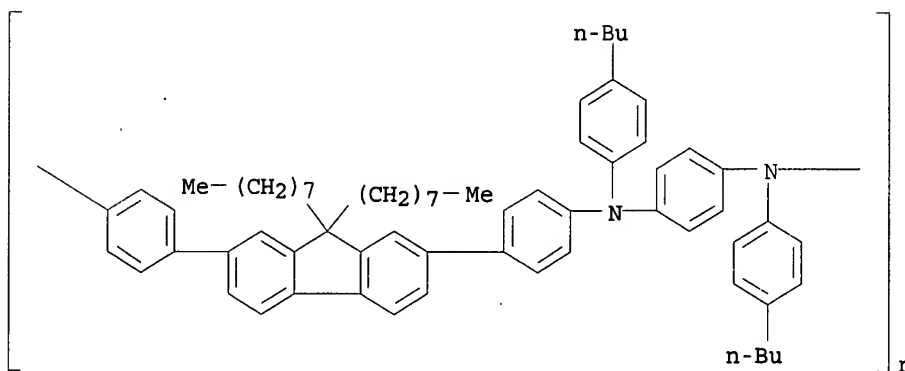
NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
 ML, MR, NE, SN, TD, TG
 EP 1378016 A1 20040107 EP 2002-720214 2002
 0412
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,
 MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
 JP 2004523876 T2 20040805 JP 2002-581600 2002
 0412
 US 2004214039 A1 20041028 US 2004-474814 2004
 0615
 PRIORITY APPLN. INFO.: GB 2001-9295 A 2001
 0412
 WO 2002-GB1723 W 2002
 0412

AB Optoelectronic devices (e.g., light-emitting devices, photodetectors) are described which employ polymer blends in which phase separation of the polymers in the polymer blend is induced so as to control the propagation of light in a predetd. direction. In light-emitting devices, the light-emitting material may be incorporated within the blend or may be a sep. layer. Methods for fabricating the devices including methods for producing phase-separated blends, are also described.

IT 223569-28-6
 (optoelectronic devices using phase-separated polymer blends for light control and their fabrication)

RN 223569-28-6 HCAPLUS

CN Poly[[(4-butylphenyl)imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



IC ICM H01L051-20

ICS H01L027-00

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38, 76

IT 210347-52-7, F8BT 223569-28-6

(optoelectronic devices using phase-separated polymer blends for light control and their fabrication)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 28 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:791425 HCAPLUS

DOCUMENT NUMBER: 138:9359

TITLE: Novel Thermally Stable Blue-Light-Emitting Polymer Containing N,N,N',N'-Tetraphenyl-Phenylenediamine Units and Its Intramolecular Energy Transfer

AUTHOR(S): Li, Hongchao; Hu, Yufeng; Zhang, Yanguang; Ma, Dongge; Wang, Lixiang; Jing, Xiabin; Wang, Fosong

CORPORATE SOURCE: State Key Laboratory of Polymer Physics and Chemistry, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun, 130022, Peop. Rep. China

SOURCE: Chemistry of Materials (2002), 14(11), 4484-4486

CODEN: CMATEX; ISSN: 0897-4756

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

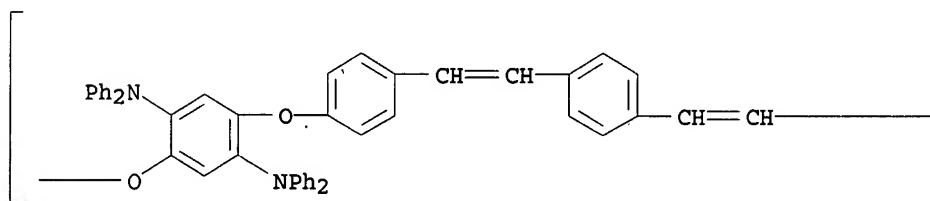
AB A novel thermally stable and soluble blue-light-emitting polymer containing bulky N,N,N',N'-tetraphenylphenylenediamine (TPPA) and phenylenevinylene (PV) moieties, P1, was synthesized by the Wittig condensation reaction in a good yield (>80 %). The resulting polymer possesses a high mol. weight ($M_w = 68\,200$) and excellent thermal stability ($T_g = 179\text{ }^\circ\text{C}$). A blue light with the maximum emission peak at 430 nm in solution and 450 nm in film was observed when excited at different wavelengths where TPPA and PV moieties display their own absorption peak, indicating the existence of intramol. energy transfer between them. The preliminary single-layer light-emitting device with a configuration of ITO/P1/Mg-Ag emitted a bright blue light with an emission peak at 442 nm. The maximum brightness and electroluminescent efficiency reach 144 cd/m² and 0.2 cd/A, resp.

IT 477245-47-9P
(film and in solution; novel thermally stable blue-light-emitting polymer containing N,N,N',N'-tetra-Ph-phenylenediamine units and its intramol. energy transfer)

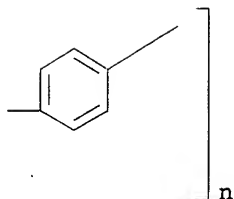
RN 477245-47-9 HCAPLUS

CN Poly[oxy[2,5-bis(diphenylamino)-1,4-phenylene]oxy-1,4-phenylene-1,2-ethenediyl-1,4-phenylene-1,2-ethenediyl-1,4-phenylene] (9CI)
(CA INDEX NAME)

PAGE 1-A



PAGE 1-B



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36, 76

IT 477245-47-9P

(film and in solution; novel thermally stable blue-light
-emitting polymer containing N,N,N',N'-tetra-Ph-
phenylenediamine units and its intramol. energy transfer)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L25 ANSWER 29 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:616131 HCAPLUS

DOCUMENT NUMBER: 137:161256

TITLE: Organic electro-luminescent devices,
manufacturing method capable of forming a
homogeneous luminescent layer with no phase
separation, and electronic equipment

INVENTOR(S): Morii, Katsuyuki; Seki, Shunichi

PATENT ASSIGNEE(S): Seiko Epson Corporation, Japan

SOURCE: U.S. Pat. Appl. Publ., 17 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. ----- | KIND ---- | DATE ----- | APPLICATION NO. ----- | DATE |
|------------------------|--------------|---------------|--------------------------|-------------------|
| US 2002109456 | A1 | 20020815 | US 2001-994816 | 2001 1128 |
| JP 2002231447 | A2 | 20020816 | JP 2001-353682 | 2001 1119 |
| CN 1359253 | A | 20020717 | CN 2001-139498 | 2001 1127 |
| JP 2004140004 | A2 | 20040513 | JP 2004-38297 | 2004 0216 |
| PRIORITY APPLN. INFO.: | | | JP 2000-361559 | A 2000 1128 |
| | | | JP 2001-353682 | A |

USHA SHRESTHA EIC 1700 REM 4B28

2001
1119

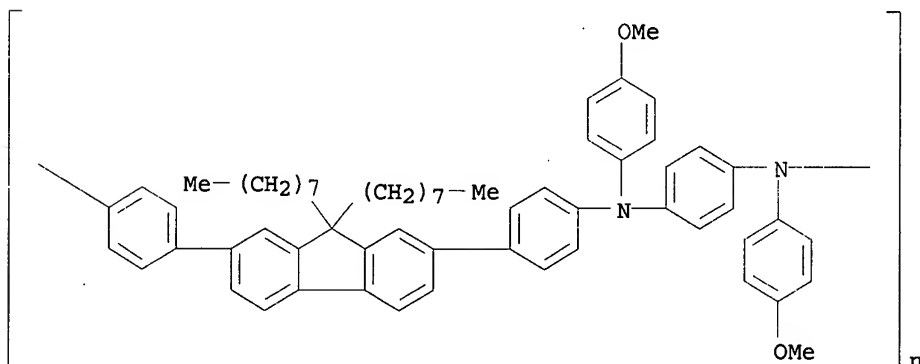
AB Methods for manufacturing organic electroluminescent devices are discussed which entail forming light-emitting layers by discharging above a substrate ≥ 2 compns. each including ≥ 1 organic electroluminescent material, the order of discharging the compns. above the substrate starting with the composition which has the fewest number of organic electroluminescent materials or the composition which is most difficult to be phase separated after the layer is formed. Organic electroluminescent devices (OLEDs) manufactured by the above method are also described as are electronic devices employing the OLEDs.

IT 223569-30-0

(light-emitting layer containing; method for manufacturing organic electro-luminescent devices capable of forming a homogeneous luminescent layer with no phase separation, and electronic devices)

RN 223569-30-0 HCAPLUS

CN Poly[[(4-methoxyphenyl) imino]-1,4-phenylene[(4-methoxyphenyl) imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



IC ICM B05D005-12

ICS H05B033-10

INCL 313504000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74, 76

IT 195456-48-5, Poly(9,9-dioctyl-9H-fluorene-2,7-diyl) 210347-52-7

220797-16-0 223569-30-0

(light-emitting layer containing; method for manufacturing organic electro-luminescent devices capable of forming a homogeneous luminescent layer with no phase separation, and electronic devices)

L25 ANSWER 30 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:591721 HCAPLUS

DOCUMENT NUMBER: 137:147552

TITLE: Polymeric fluorescent substances for polymer light emitting devices and production method thereof

INVENTOR(S): Noguchi, Takanobu; Tsubata, Yoshiaki; Doi, Shuji

PATENT ASSIGNEE(S): Sumitomo Chemical Company, Limited, Japan
 SOURCE: Eur. Pat. Appl., 32 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------|-------------------|
| EP 1229063 | A2 | 20020807 | EP 2002-250742 | 2002 0204 |
| EP 1229063 | A3 | 20020814 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| WO 2002102925 | A1 | 20021227 | WO 2001-JP5219 | 2001 0619 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| US 2002177687 | A1 | 20021128 | US 2002-62223 | 2002 0204 |
| US 6905785 | B2 | 20050614 | | |
| JP 2002338665 | A2 | 20021127 | JP 2002-27908 | 2002 0205 |
| US 2004234810 | A1 | 20041125 | US 2004-480996 | 2004 0520 |
| PRIORITY APPLN. INFO.: | | | JP 2001-28001 | A 2001 0205 |
| | | | JP 2001-71776 | A 2001 0314 |
| | | | WO 2001-JP5219 | W 2001 0619 |

AB Provided is a method of producing a polymeric fluorescent substance wherein one or more monomers X1Ar1X2 (wherein Ar1 represents a divalent group selected from arylene groups, divalent heterocyclic compound groups, and divalent or trivalent hetero atom-bonded arylene or divalent heterocyclic compound groups, and X1 and X2 represent leaving groups) are polymerized in the presence of a zerovalent nickel complex. By using the polymeric fluorescent

substance, a high performance polymer LED can easily be obtained. Thus, 0.82 g 2,7-dibromo-9,9-dioctylfluorene was polymerized in the presence of 0.55 g 2,2'-bipyridyl ligand and 0.96 g bis(1,5-cyclooctadiene) nickel(0) polymerization catalyst in THF to give a polymer with weight average mol. weight 5.4×10^5 , number average mol. weight 1.7×10^5 , fluorescent peak at 428 nm, and relative fluorescent intensity 4.0, which was used to prepare a light emitting device.

IT 444796-31-0P 444796-33-2P

(preparation of fluorescent polymers for polymer light emitting devices)

RN 444796-31-0 HCAPLUS

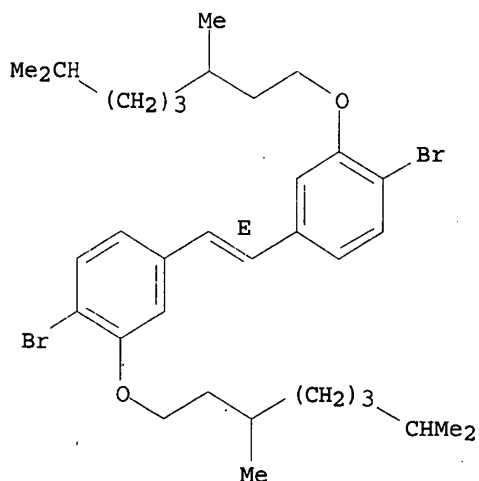
CN 1,4-Benzenediamine, N,N'-bis(4-bromophenyl)-N,N'-bis(4-butylphenyl)-, polymer with 1,1'-(1E)-1,2-ethenediylbis[4-bromo-3-[(3,7-dimethyloctyl)oxy]benzene] (9CI) (CA INDEX NAME)

CM 1

CRN 444795-98-6

CMF C34 H50 Br2 O2

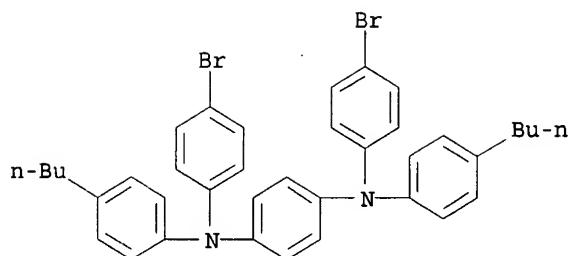
Double bond geometry as shown.



CM 2

CRN 372200-89-0

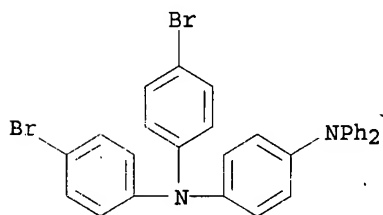
CMF C38 H38 Br2 N2



RN 444796-33-2 HCAPLUS
 CN 1,4-Benzenediamine, N,N-bis(4-bromophenyl)-N',N'-diphenyl-,
 polymer with stereoisomer of 1,1'-(1E)-1,2-ethenediylbis[4-bromo-3-
 [(3,7-dimethyloctyl)oxy]benzene] (9CI) (CA INDEX NAME)

CM 1

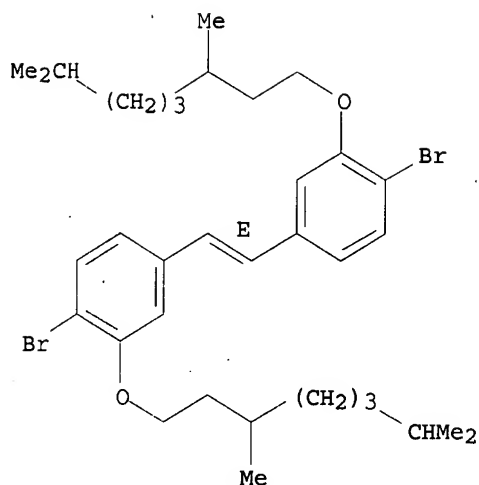
CRN 444796-17-2
 CMF C30 H22 Br2 N2



CM 2

CRN 444795-98-6
 CMF C34 H50 Br2 O2

Double bond geometry as shown.



IC ICM C08G061-02
ICS C08G061-10; C09K011-06
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 35, 38, 76

IT 444795-96-4P 444795-99-7P 444796-01-4P 444796-03-6P
444796-05-8P 444796-07-0P 444796-10-5P 444796-13-8P
444796-14-9P 444796-18-3P 444796-21-8P 444796-24-1P
444796-27-4P 444796-29-6P 444796-30-9P 444796-31-0P
444796-33-2P 444796-35-4P 444890-57-7P

(preparation of fluorescent polymers for polymer light emitting devices)

L25 ANSWER 31 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:466837 HCAPLUS

DOCUMENT NUMBER: 137:192418

TITLE: Blue emission from light-emitting diodes based on lithium complex

AUTHOR(S): Chen, Zhijian; Yu, Junsheng; Miyata, Kenji
Ogino Seizo

CORPORATE SOURCE: Graduate School of Bio-Applications and System Engineering, Tokyo University of Agriculture and Technology, Tokyo, 184-8588, Japan

SOURCE: Journal of Physics D: Applied Physics (2002), 35(11), 1099-1102

CODEN: JPAPBE; ISSN: 0022-3727

PUBLISHER: Institute of Physics Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors report the optical and electroluminescent properties of the Li complex of (2,3-dimethyl-8-hydroxyquinoline) Li (LiMMq), exhibiting intense photoluminescence (PL), peaked at .apprx.458 nm. As the result of electron-donating Me groups in 8-hydroxyquinoline, the PL spectrum is blue-shifted relative to (8-hydroxyquinoline) Li (Liq). The double-layer electroluminescent devices with a novel polymer poly(N,N'-diphenyl-N,N'-bis(4-methylphenyl)-1,4-phenylenediamine-1,3-diisopropenylbenzene) as hole transporting layer and the LiMMq as emitting layer, sandwiched between cathode of Mg:Ag alloy and

anode of In-Sn oxide, were fabricated, and the bright blue electroluminescence with luminance of >8000 cd m⁻² was obtained. The properties indicate that the LiMMq is a potential blue emitting material for the application in light-emitting diodes.

IT 306734-14-5P

(blue emission from light-emitting diodes
based on lithium complex)

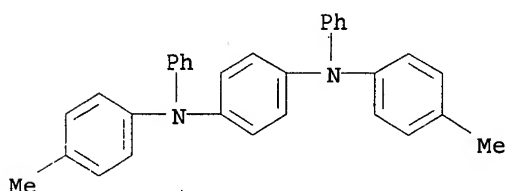
RN 306734-14-5 HCAPLUS

CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-,
polymer with 1,4-bis(1-methylethenyl)benzene (9CI) (CA INDEX
NAME)

CM 1

CRN 138171-14-9

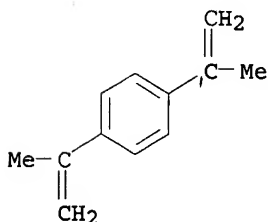
CMF C32 H28 N2



CM 2

CRN 1605-18-1

CMF C12 H14



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

IT 306734-14-5P

(blue emission from light-emitting diodes
based on lithium complex)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L25 ANSWER 32 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:238121 HCAPLUS

DOCUMENT NUMBER: 136:286261

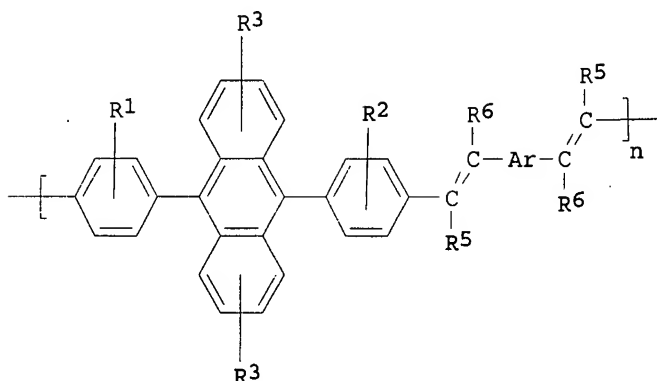
TITLE: Electroluminescence devices

INVENTOR(S): Chen, Shi Min; Shi, Chan Min

PATENT ASSIGNEE(S): Eastman Kodak Co., USA
SOURCE: Jpn. Kokai Tokkyo Koho, 88 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-------------------|
| ----- | ---- | ----- | ----- | |
| JP 2002093582 | A2 | 20020329 | JP 2001-178712 | 2001 0613 |
| PRIORITY APPLN. INFO.: | | | US 2000-593073 | A 2000 0613 |

GI



I

AB The devices comprise a phosphor comprising a diphenylanthracene conjugated polymer I (R1-6 = H, C1-24 alkyl, C1-24 alkoxy; C6-28 (substituted) aryl; C4-40 (substituted) heteroaryl; R5,6 = cyano).

IT 406216-18-0

(organic electroluminescence devices containing diphenylanthracene conjugated polymer)

RN 406216-18-0 HCAPLUS

CN Poly[[2,6-bis[(2-ethylhexyl)oxy]-9,10-anthracenediyl]-1,4-phenylene-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

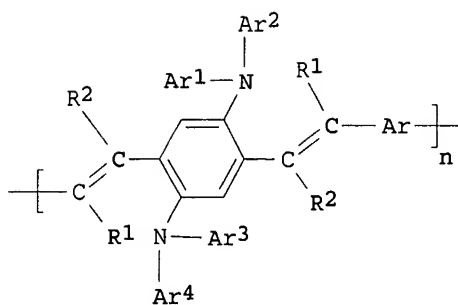
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

*
 IC ICM H05B033-14
 ICS C08G016-02; C09K011-06
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 IT 37271-44-6 50926-11-9, ITO 406216-11-3 406216-12-4
 406216-13-5 406216-14-6 406216-15-7 406216-16-8
 406216-17-9 406216-18-0 406216-19-1 406216-20-4
 406216-21-5 406499-00-1 406499-02-3
 (organic electroluminescence devices containing diphenylanthracene conjugated polymer)

L25 ANSWER 33 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2001:895587 HCAPLUS
 DOCUMENT NUMBER: 136:45407
 TITLE: Electroluminescent devices having arylamine polymers
 INVENTOR(S): Shi, Jianmin; Zheng, Shiyong
 PATENT ASSIGNEE(S): Eastman Kodak Company, USA
 SOURCE: U.S., 32 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|-------------------|
| US 6329086 | B1 | 20011211 | US 2000-593127 | 2000 0613 |
| TW 530076 | B | 20030501 | TW 2001-90110070 | 2001 0427 |
| EP 1164178 | A1 | 20011219 | EP 2001-202101 | 2001 0601 |
| EP 1164178 | B1 | 20030903 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| JP 2002083683 | A2 | 20020322 | JP 2001-176991 | 2001 0612 |
| PRIORITY APPLN. INFO.: | | | US 2000-593127 | A 2000 0613 |

GI



I

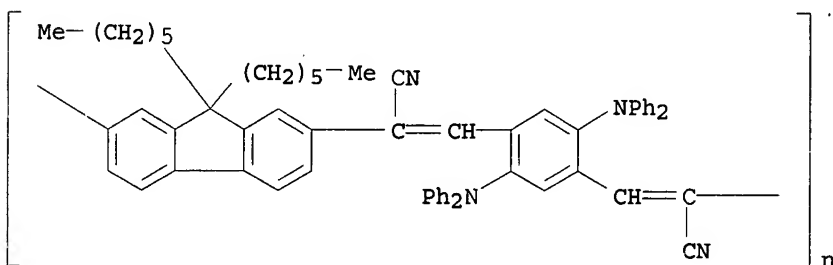
AB Electroluminescent devices which include an anode, a cathode, and a polymer luminescent material disposed between the anode and cathode are described in which the polymer luminescent material includes arylamine moiety are described by the general formula I (R1 and R2 = independently selected H, C1-24 alkyl, C6-40 (un)substituted aryl, C4-40 (un)substituted heteroaryl, or cyano groups; and Ar, Ar1-4 = independently selected C6-40 (un)substituted aryl; and/or C4-40 (un)substituted heteroaryl groups). The polymer luminescent material may be doped with ≥ 1 fluorescent dyes or other light-emitting materials.

IT 369370-71-8P 369370-72-9P 380498-76-0P
380498-77-1P 380498-78-2P 380498-79-3P
380498-80-6P 380498-81-7P

(electroluminescent devices using arylamine polymers)

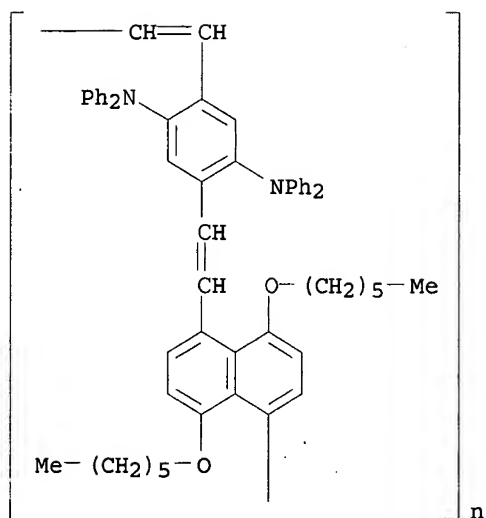
RN 369370-71-8 HCAPLUS

CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl)(1-cyano-1,2-ethenediyl)[2,5-bis(diphenylamino)-1,4-phenylene](2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



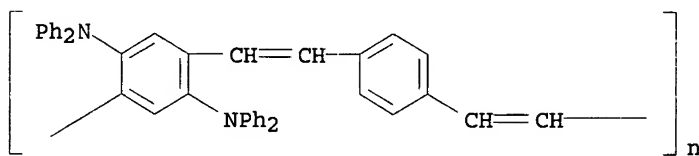
RN 369370-72-9 HCAPLUS

CN Poly[[4,8-bis(hexyloxy)-1,5-naphthalenediyl]-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



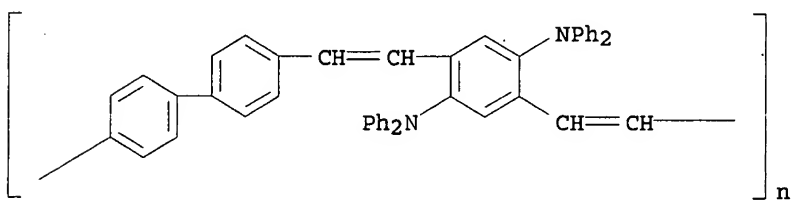
RN 380498-76-0 HCAPLUS

CN Poly[[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl-1,4-phenylene-1,2-ethenediyl] (9CI) (CA INDEX NAME)



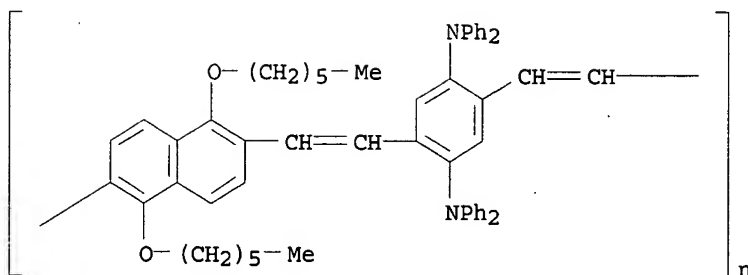
RN 380498-77-1 HCAPLUS

CN Poly[[1,1'-biphenyl]-4,4'-diyl-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



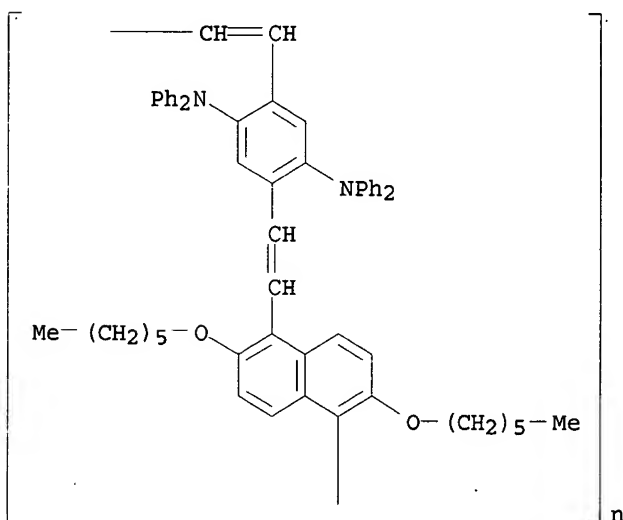
RN 380498-78-2 HCAPLUS

CN Poly[[1,5-bis(hexyloxy)-2,6-naphthalenediyl]-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



RN 380498-79-3 HCAPLUS

CN Poly[[2,6-bis(hexyloxy)-1,5-naphthalenediyl]-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



RN 380498-80-6 HCAPLUS

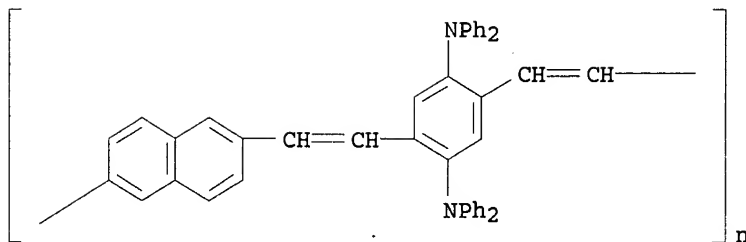
CN Poly[[2,6-bis(octyloxy)-9,10-anthracenediyl]-1,4-phenylene-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

RN 380498-81-7 HCAPLUS

CN Poly[2,6-naphthalenediyl-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



IC ICM H05B033-14

INCL 428690000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38, 76

IT 369370-71-8P 369370-72-9P 369385-63-7P

380498-76-0P 380498-77-1P 380498-78-2P

380498-79-3P 380498-80-6P 380498-81-7P

380643-48-1P

(electroluminescent devices using arylamine polymers)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 34 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:689529 HCAPLUS

DOCUMENT NUMBER: 135:378433

TITLE: Blue and yellow emission from derivatives of tris(8-hydroxyquinoline)aluminum light-emitting diodes

AUTHOR(S): Chen, Zhijian; Yu, Junsheng; Sone, Masato; Miyata, Seizo; Lu, Youmei; Watanabe, Toshiyuki
CORPORATE SOURCE: Graduate School of Bio-Applications and System Engineering, Tokyo University of Agriculture and Technology, Tokyo, 184-8588, Japan

SOURCE: Journal of Physics D: Applied Physics (2001), 34(17), 2679-2682

CODEN: JPAPBE; ISSN: 0022-3727

PUBLISHER: Institute of Physics Publishing

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The novel derivs. of tris(8-hydroxyquinoline)aluminum (Alq3), tris[5-(methyl-malononitrile)-8-hydroxyquinoline]aluminum and tris(2,3-dimethyl-8-hydroxyquinoline)aluminum were synthesized. The double-layer electroluminescent devices were fabricated with a novel polymer poly(N,N'-diphenyl-N,N'-bis(4-methylphenyl)-1,4-phenylenediamine-1,3-diisopropenylbenzene) as a hole transporting layer and the derivs. as an emitting layer, sandwiched between an anode of Mg:Ag and a cathode of In-Sn oxide. Bright blue and yellow electroluminescence emissions were obtained from the devices. The exptl. results indicate that a functional group of electron acceptors connected to 8-hydroxyquinoline results in the emission red shift and a functional group of electron donors results in the emission blueshift. Alq3 and its derivs. are expected to be used as an emitter to achieve various color emissions.

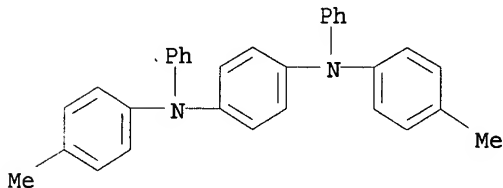
IT 306734-14-5

(blue and yellow emission from derivs. of tris(8-hydroxyquinoline)aluminum light-emitting

diodes)
 RN 306734-14-5 HCAPLUS
 CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-,
 polymer with 1,4-bis(1-methylethenyl)benzene (9CI) (CA INDEX
 NAME)

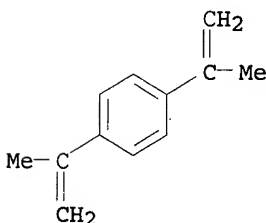
CM 1

CRN 138171-14-9
 CMF C32 H28 N2



CM 2

CRN 1605-18-1
 CMF C12 H14



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)
 IT 306734-14-5 374690-46-7 374690-47-8,
 Tris(2,3-dimethyl-8-hydroxyquinolinato)aluminum
 (blue and yellow emission from derivs. of tris(8-
 hydroxyquinoline)aluminum **light-emitting**
 diodes)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L25 ANSWER 35 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2001:582418 HCAPLUS
 DOCUMENT NUMBER: 135:336416
 TITLE: Conjugated polymers containing arylamine
 pendants for light-emitting diodes
 AUTHOR(S): Shi, Jianmin; Zheng, Shiyang
 CORPORATE SOURCE: Research & Development, Eastman Kodak Company,
 Rochester, NY, 14650, USA
 SOURCE: Macromolecules (2001), 34(19), 6571-6576
 CODEN: MAMOBX; ISSN: 0024-9297

USHA SHRESTHA EIC 1700 REM 4B28

PUBLISHER: American Chemical Society
 DOCUMENT TYPE: Journal
 LANGUAGE: English

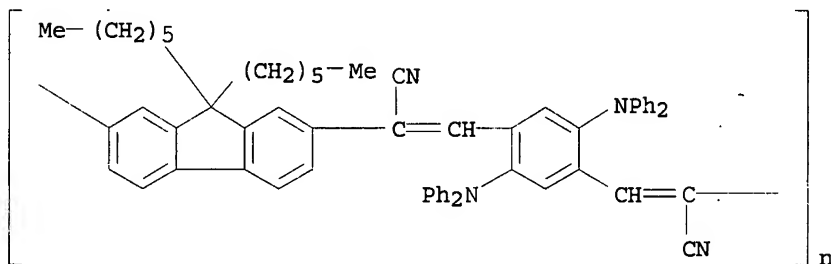
AB New conjugated light-emitting polymers containing arylamine pendants have been designed, synthesized, and characterized. The resulting polymers are thermally stable, have rigid backbones, show high T_g and T_d values, and are readily soluble in organic solvents. The single-layer LED devices fabricated from these polymers emit light ranging from bright yellow to bright red. The color of the emitting light can be tuned by incorporating various aromatic units. The devices show very low turn-on voltages.

IT 369370-71-8P 369370-72-9P

(preparation and application of conjugated polymers containing arylamine pendant group for light-emitting diodes)

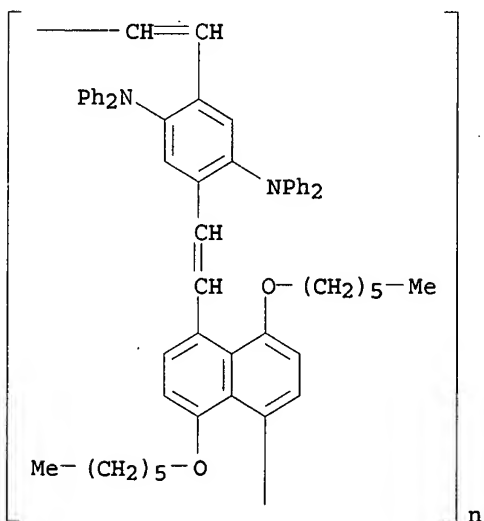
RN 369370-71-8 HCAPLUS

CN Poly[(9,9-dihexyl-9H-fluorene-2,7-diyl)(1-cyano-1,2-ethenediyl)[2,5-bis(diphenylamino)-1,4-phenylene](2-cyano-1,2-ethenediyl)] (9CI) (CA INDEX NAME)



RN 369370-72-9 HCAPLUS

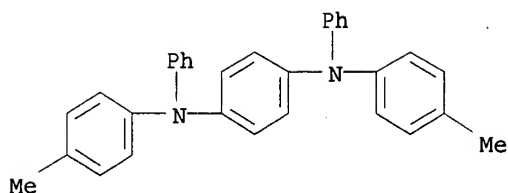
CN Poly[[4,8-bis(hexyloxy)-1,5-naphthalenediyl]-1,2-ethenediyl[2,5-bis(diphenylamino)-1,4-phenylene]-1,2-ethenediyl] (9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)
Section cross-reference(s): 38, 76
IT 369370-71-8P 369370-72-9P 369370-73-0P
369370-74-1P 369370-75-2P 369370-76-3P 369385-54-6P
369385-63-7P
(preparation and application of conjugated polymers containing arylamine
pendant group for **light-emitting** diodes)
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

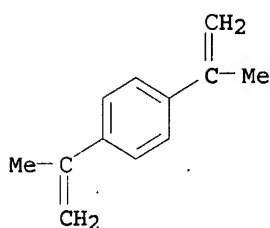
L25 ANSWER 36 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:422364 HCAPLUS
DOCUMENT NUMBER: 135:167478
TITLE: Influence of sensitizer on organic
electroluminescence
AUTHOR(S): Chen, Zhijian; Yu, Junsheng; Sakuratani,
Yuuki; Li, Minrun; Sone, Masato; Miyata,
Seizo; Watanabe, Toshiyuki; Wang, Xiaoqing;
Sato, Hisaya
CORPORATE SOURCE: Graduate School of Bio-Applications and System
Engineering, Tokyo University of Agriculture
and Technology, Koganei, Tokyo, 184-8588,
Japan
SOURCE: Journal of Applied Physics (2001), 89(12),
7895-7898
CODEN: JAPIAU; ISSN: 0021-8979
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors synthesized a polymer, poly(N,N'-diphenyl-N,N'-bis(4-
methylphenyl)-1,4-phenylenediamine-1,3-diisopropenylbenzene)
(PDAAIPD), of which the energy of the HOMO was measured to be 5.6
eV below vacuum level. PDAAIPB was used as a hole transporter in a
light emitting diode, with tri(8-hydroxyquinoline)aluminum (Alq3)
as an electron transporter and emitting layer to ameliorate the
stability of the device, and fullerene doped in the hole
transporting layer as a sensitizer to study the influence of
sensitizer on organic electroluminescence (EL). Internal EL quantum
efficiency as high as 7.8% was obtained under an applied elec.
field of 1.2×10^6 V/cm and doping fullerene concentration 0.9%. A
function for EL quantum efficiency in terms of the dopant concentration
is derived. The theor. anal. is consistent with the exptl.
results.
IT 306734-14-5
(influence of fullerene sensitizer on
electroluminescence polymer hole transporting layer)
RN 306734-14-5 HCAPLUS
CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-,
polymer with 1,4-bis(1-methylethenyl)benzene (9CI) (CA INDEX
NAME)
CM 1
CRN 138171-14-9
CMF C32 H28 N2



CM 2

CRN 1605-18-1

CMF C12 H14



CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 38, 73

IT 306734-14-5

(influence of fullerene sensitizer on

electroluminescence polymer hole transporting layer)

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L25 ANSWER 37 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:400123 HCAPLUS

DOCUMENT NUMBER: 135:202185

TITLE: Impact of the metal cathode on the performance
of polymer light-emitting diodesAUTHOR(S): Stoessel, Matthias; Bernius, M. T.; Wittmann,
Georg; Heuser, Karsten; Blaessing, Joerg;
Birnstock, Jan; Rogler, W.; Roth, W.;
Winnacker, A.; Inbasekaran, Michael; Wu, W.;
O'Brien, J. J.CORPORATE SOURCE: Siemens AG, ZT MFI, Erlangen, 91052, Germany
SOURCE: Proceedings of SPIE-The International Society
for Optical Engineering (2001), 4105(Organic
Light-Emitting Materials and Devices IV),
92-99CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical
Engineering

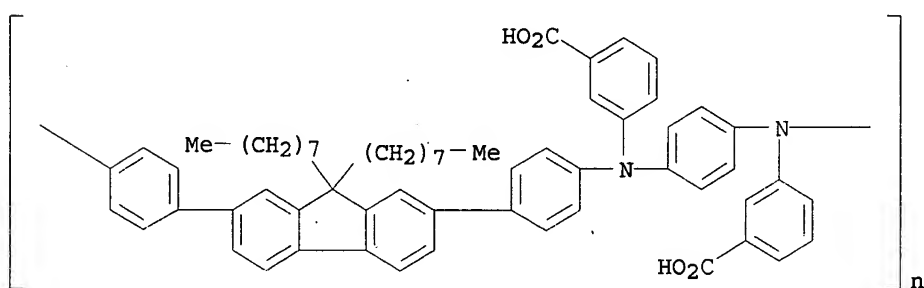
DOCUMENT TYPE: Journal

LANGUAGE: English

AB An appropriate choice of the cathode material and the process of
cathode deposition is a key issue in the development of polymer
LEDs. The impact of low work function metals on the luminescence

efficiency of thin films of polyfluorene type polymers is reported. Luminescence as well as electroluminescence expts. are presented, and in both cases, a strong correlation between the metal layer thickness and the luminescence efficiency is demonstrated. By means of time-of-flight SIMS, the distribution of the metal contamination within the polymer layers is determined. The results strongly suggest that impurity quenching of excitons by metal atoms inside the polymer layer takes place and strongly affects luminescence and device efficiency.

IT 247922-78-7
 (metal cathode impact on performance of LEDs containing)
 RN 247922-78-7 HCAPLUS
 CN Poly[[(3-carboxyphenyl)imino]-1,4-phenylene[(3-carboxyphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36, 76

IT 210347-52-7 247922-78-7

(metal cathode impact on performance of LEDs containing)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 38 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:397225 HCAPLUS

DOCUMENT NUMBER: 135:26684

TITLE: Distributed Bragg reflector, organic light emitting element, and multicolor light emitting device

INVENTOR(S): Kawase, Takeo

PATENT ASSIGNEE(S): Seiko Epson Corporation, Japan; University of Cambridge

SOURCE: PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|------|
| ----- | ---- | ----- | ----- | |
| WO 2001039286 | A1 | 20010531 | WO 2000-GB4439 | 2000 |

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

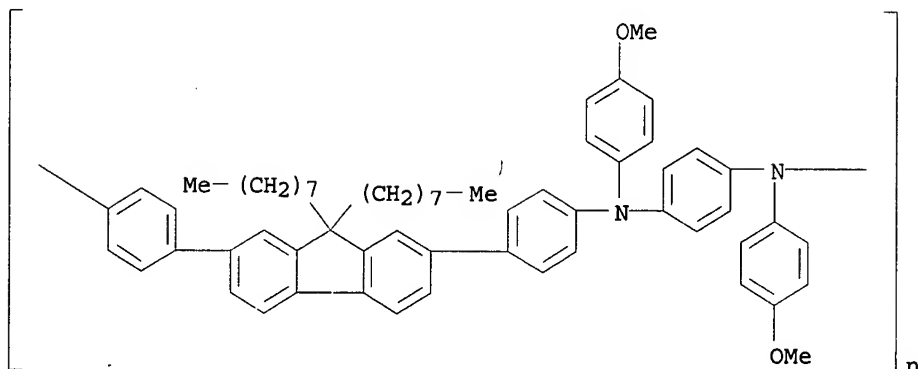
GB 2356713 A1 20010530 GB 1999-28121 1122
 1999
 1126
 EP 1151483 A1 20011107 EP 2000-979745
 2000
 1122
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
 JP 2003515769 T2 20030507 JP 2001-540855
 2000
 1122
 US 6756732 B1 20040629 US 2001-890060
 2001
 0831
 PRIORITY APPLN. INFO.: GB 1999-28121 A
 1999
 1126
 WO 2000-GB4439 W
 2000
 1122

AB Distributed Bragg reflectors are described which comprise a stack of alternating layers of a first organic material and a second organic material. The organic materials may be polymers. Organic electroluminescent elements are described which comprise organic electroluminescent materials formed on the distributed Bragg reflectors. Multicolored light-emitting device are also described which comprise a plurality of the light-emitting elements. A method of manufacturing a distributed Bragg reflector is described which entails forming a stack of layers of a first organic material and a second organic material using ink jet technol. Methods of manufacturing an organic electroluminescent light-emitting element are also described which entail providing a transparent substrate, forming a transparent electrode formed on the substrate, forming a distributed Bragg reflector on the transparent electrode, forming an organic electroluminescent light-emitting material on the distributed Bragg reflector, and forming an electrode on the light-emitting material. Multicolored light-emitting devices may be manufactured by a plurality of devices and forming the first and second materials in different thickness layers to provide different mode wavelength areas on the substrate.

IT 223569-30-0
 (organic distributed Bragg reflectors and organic light-emitting elements using them and their manufacture)

RN 223569-30-0 HCAPLUS
 CN Poly[[(4-methoxyphenyl) imino] -1,4-phenylene[(4-methoxyphenyl) imino] -1,4-phenylene (9,9-dioctyl-9H-fluorene-2,7-

diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



IC ICM H01L051-20
ICS G02B005-18; G02B005-28
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
IT 2085-33-8, Tris(8-hydroxyquinolino)aluminum 9002-89-5,
Polyvinyl alcohol 126213-51-2, Poly(3,4-ethylenedioxythiophene)
223569-30-0
(organic distributed Bragg reflectors and organic light-emitting elements using them and their manufacture)

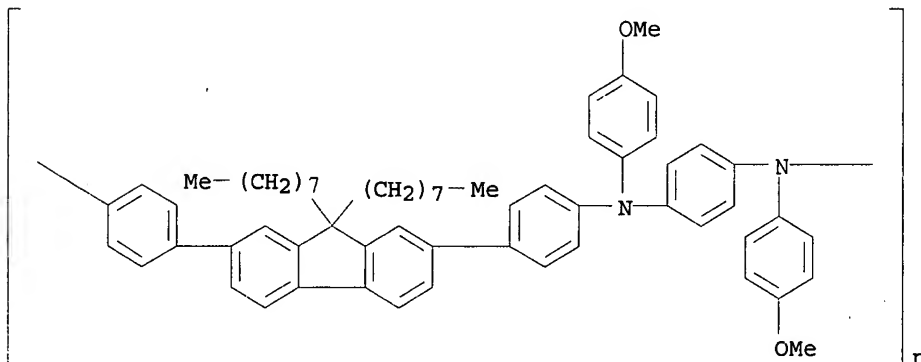
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 39 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:376218 HCAPLUS
DOCUMENT NUMBER: 135:172770
TITLE: High performance blue light-emitting diodes based on conjugated polymer blends
AUTHOR(S): Palilis, L. C.; Lidzey, D. G.; Redecker, M.; Bradley, D. D. C.; Inbasekaran, M.; Woo, E. P.; Wu, W. W.
CORPORATE SOURCE: Centre for Molecular Materials and Department of Physics and Astronomy, Hicks Building, University of Sheffield, Sheffield, S3 7RH, UK
SOURCE: Synthetic Metals (2001), 121(1-3), 1729-1730
CODEN: SYMEDZ; ISSN: 0379-6779
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors report on the fabrication and properties of single layer blue light-emitting diodes (LEDs) based on conjugated polymer blends of emissive and hole transport materials. Despite the fact that the photoluminescence quantum efficiency of the blend is lower compared to that of both the host and the guest polymers, an enhancement in both the electroluminescence quantum and power efficiency is seen for the blend. This observation indicates that the whole transporting material leads to a significantly improved hole injection and thus a greatly improved charge carrier balance factor. Optimized single layer blue LEDs

showed a maximum brightness of 6000 Cd/m² at 14 V and a maximum external ELQE of 1% (2.1 Cd/A) at 15 Cd/m² corresponding to a power efficiency of 1.1 m/W.

IT 223569-30-0
(high performance blue light-emitting diodes based on conjugated polymer blends)
RN 223569-30-0 HCAPLUS
CN Poly[[4-methoxyphenyl]imino]-1,4-phenylene[[4-methoxyphenyl]imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

IT 223569-30-0
(high performance blue light-emitting diodes based on conjugated polymer blends)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 40 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:252950 HCAPLUS

DOCUMENT NUMBER: 134:273356

TITLE: Arylamine-substituted vinyl monomer, polymer from the monomer, and organic electroluminescent device using the polymer

INVENTOR(S): Kido, Junji; Uchishiro, Tsuyoshi; Yamada, Tomohisa; Suzuki, Takayuki

PATENT ASSIGNEE(S): Chemipro Kasei K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|-----------|
| JP 2001098023 | A2 | 20010410 | JP 1999-277126 | 1999 0929 |

PRIORITY APPLN. INFO.: JP 1999-277126

1999
0929

OTHER SOURCE(S): MARPAT 134:273356

AB The monomer is that represented as $R_1CH_2C(R_2)(R_3)NAr_1Ar_2$ [$R_1 = H, \text{ alkyl}; R_2, R_3 = H, Me, Et; Ar_1, Ar_2 = (\text{substituted}) \text{ aromatic group}$]. The polymer is that having repeating unit corresponding to the above monomer. The organic electroluminescent device uses the above polymer, preferably in a hole-transporting layer. The device shows retention of quality in storage at high temperature because recrystn. or coagulation, shown in conventional low-mol. organic electroluminescent material, prevented in the polymer having high glass-transition temperature

IT 331980-58-6P

(arylamine-substituted vinyl polymer for organic electroluminescent device)

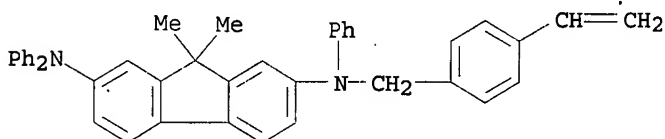
RN 331980-58-6 HCAPLUS

CN 9H-Fluorene-2,7-diamine, N-[(4-ethenylphenyl)methyl]-9,9-dimethyl-N,N',N'-triphenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 331980-57-5

CMF C42 H36 N2



IC ICM C08F012-28

ICS C07C211-54; C07D209-86; H05B033-14; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 35, 38

IT 331980-50-8P 331980-52-0P 331980-56-4P 331980-58-6P

(arylamine-substituted vinyl polymer for organic electroluminescent device)

L25 ANSWER 41 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:707427 HCAPLUS

DOCUMENT NUMBER: 133:288606

TITLE: Electroluminescent component and production thereof

INVENTOR(S): Kanbe, Sadao; Seki, Shunichi

PATENT ASSIGNEE(S): Seiko Epson Corp., Japan

SOURCE: PCT Int. Appl., 50 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|------|
| ----- | ---- | ----- | ----- | |
| WO 2000059267 | A1 | 20001005 | WO 2000-JP1962 | |

USHA SHRESTHA EIC 1700 REM 4B28

2000
0329

W: CN, JP, KR, US
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU,
MC, NL, PT, SE

EP 1083775 A1 20010314 EP 2000-912924

2000
0329

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,
MC, PT, IE, FI

TW 508975 B 20021101 TW 2000-89105849

2000
0329

US 6878312 B1 20050412 US 2000-701468

2000
0329

PRIORITY APPLN. INFO.: JP 1999-86944 A 1999
0329

JP 1999-250486 A 1999
0903

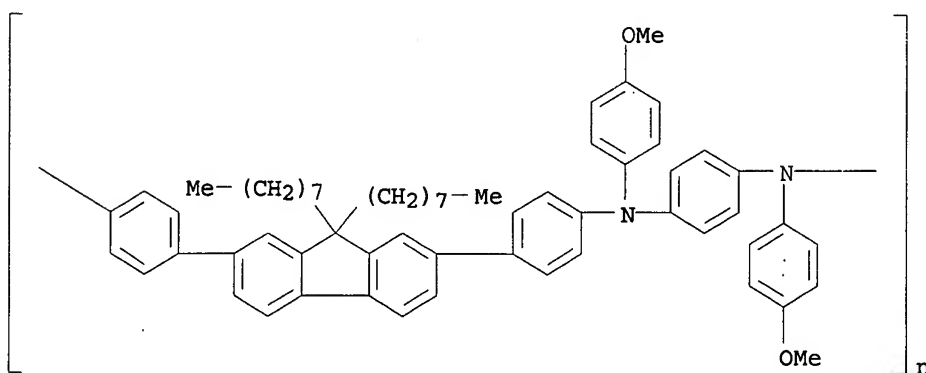
WO 2000-JP1962 W 2000
0329

AB The invention refers to an electroluminescent component, suitable
for use in display device, and its production wherein a benzene derivative
with at least one substituted group with at least 3 C is used as a
solvent in the ink jet printing method in order to prevent the
clogging of the jets and separation of components during spraying.

IT 223569-30-0
(electroluminescent component and production thereof)

RN 223569-30-0 HCAPLUS

CN Poly[[(4-methoxyphenyl)imino]-1,4-phenylene[(4-
methoxyphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-
diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



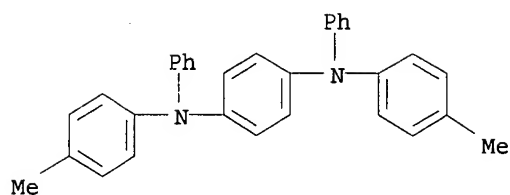
IC ICM H05B033-14
ICS H05B033-10; C09D011-00; C09K011-06
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)
 IT 71-43-2, Benzene, uses 91-17-8, Decalin 98-82-8, Cumene
 104-51-8, Butylbenzene 108-67-8, Mesitylene, uses 108-88-3,
 Toluene, uses 119-64-2, Tetralin 123-01-3, Dodecylbenzene
 198-55-0, Perylene 488-23-3, 1,2,3,4-Tetramethyl benzene
 517-51-1, Rubrene 527-53-7, 1,2,3,5-Tetramethyl benzene
 538-68-1, Pentyl benzene 827-52-1, Cyclohexylbenzene
 1047-16-1, Quinacridone 1330-20-7, Xylene, uses 1499-10-1,
 9,10-Diphenyl anthracene 7385-67-3, Nile Red 7429-90-5,
 Aluminum, uses 7440-70-2, Calcium, uses 7631-86-9, Silica,
 uses 7789-24-4, Lithium fluoride, uses 12223-84-6, Kayalon
 Fast Yellow GL 25067-59-8, Polyvinyl carbazole 25155-15-1,
 Cymene 25233-34-5, Polythiophene 25340-17-4, Diethylbenzene
 25619-60-7, Tetramethyl benzene 27236-84-6, Tetraphenylbutadiene
 38215-36-0, Coumarin 6 50926-11-9, ITO 64800-20-0,
 Dibutylbenzene 73466-99-6, Dipentylbenzene 80280-27-9
 95270-88-5, Polyfluorene 133019-09-7, Poly(9,9-dihexyl-9H-
 fluorene-2,7-diyl) 195456-48-5, Poly(9,9-dioctyl-9H-fluorene-2,7-
 diyl) 210347-52-7 220797-16-0 223569-30-0
 (electroluminescent component and production thereof)
 REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L25 ANSWER 42 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 2000:685089 HCAPLUS
 DOCUMENT NUMBER: 133:350896
 TITLE: Synthesis of new hole transport polymers based
 on N,N'-diphenyl-N,N'-bis(4-methylphenyl)-1,4-
 phenylenediamine
 AUTHOR(S): Wang, Xiaoqing; Chen, Zhijian; Ogino, Kenji;
 Sato, Hisaya; Miyata, Seizo; Tan, Huiming
 CORPORATE SOURCE: Faculty of Technology, Tokyo University of
 Agriculture and Technology, Tokyo, 184-8588,
 Japan
 SOURCE: Polymer Journal (Tokyo) (2000), 32(9), 778-783
 CODEN: POLJB8; ISSN: 0032-3896
 PUBLISHER: Society of Polymer Science, Japan
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB New hole transport polymers were prepared by polyaddn. of
 N,N'-diphenyl-N,N'-bis(4-methylphenyl)-1,4-phenylenediamine with
 divinyl or diisopropenylbenzene and were characterized by 1H NMR,
 DSC, UV absorption spectra and cyclic voltammetry. These polymers
 exhibit high glass transition temps. and low oxidation potentials.
 Two-layer electroluminescent (EL) devices, in which the polymers
 were spin cast on ITO anode as the hole transport layer and
 aluminum tris(8-hydroxyquinoline) (Alq) was used as the emitting
 layer, gave a high brightness of above 10000 cd m⁻² with an
 operating voltage of less than 15 V.
 IT 306734-13-4P 306734-14-5P
 (preparation of hole transport polymers based on
 diphenylbis(methylphenyl)phenylenediamine and
 electroluminescent devices)
 RN 306734-13-4 HCAPLUS
 CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-,
 polymer with 1,4-diethenylbenzene (9CI) (CA INDEX NAME)

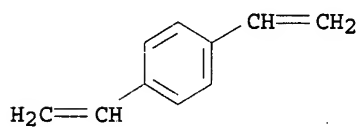
CM 1

CRN 138171-14-9
CMF C32 H28 N2



CM 2

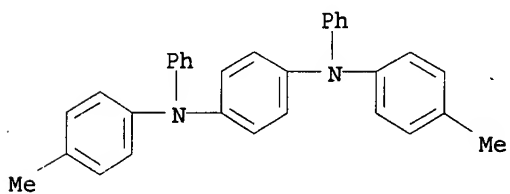
CRN 105-06-6
CMF C10 H10



RN 306734-14-5 HCAPLUS
CN 1,4-Benzenediamine, N,N'-bis(4-methylphenyl)-N,N'-diphenyl-,
polymer with 1,4-bis(1-methylethenyl)benzene (9CI) (CA INDEX
NAME)

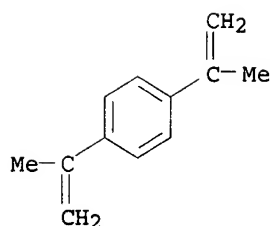
CM 1

CRN 138171-14-9
CMF C32 H28 N2



CM 2

CRN 1605-18-1
CMF C12 H14



CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 38, 73

IT 306734-13-4P 306734-14-5P

(preparation of hole transport polymers based on diphenylbis(methylphenyl)phenylenediamine and electroluminescent devices)

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 43 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:612657 HCAPLUS

DOCUMENT NUMBER: 133:185304

TITLE: Organic light emitters using active material blends

INVENTOR(S): Burroughes, Jeremy Henley; Hughes, Peter William

PATENT ASSIGNEE(S): Cambridge Display Technology Limited, UK

SOURCE: Brit. UK Pat. Appl., 30 pp.

CODEN: BAXXDU

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|---------------|
| GB 2340304 | A1 | 20000216 | GB 1998-18376 | 1998 0821 |
| PRIORITY APPLN. INFO.: | | | | GB 1998-18376 |
| | | | | 1998 0821 |

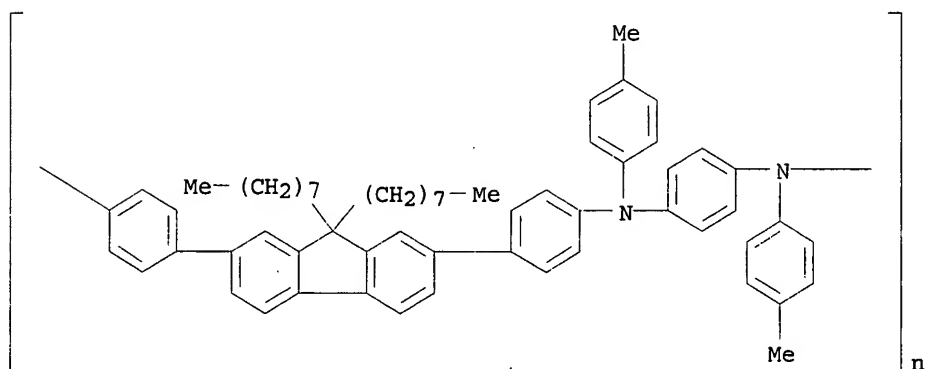
AB Light-emitting devices are described which comprise a first charge carrier injecting layer for injecting pos. charge carriers; a second charge carrier injecting layer for injecting neg. charge carriers; and a light-emitting layer located between the charge carrier injecting layers and comprising a mixture of at least two electroluminescent organic materials, the relative proportions of the the organic materials in the light-emitting layer influencing the emission color of the light-emitting layer. Methods for tailoring the emission color of a light-emitting material are described which entail mixing a first electroluminescent organic material with a second electroluminescent organic material in a ratio so as to achieve the desired emission color.

IT 223569-29-7 288263-79-6 288263-90-1

(organic light-emitting devices with active layers formed from blends for emission color control)

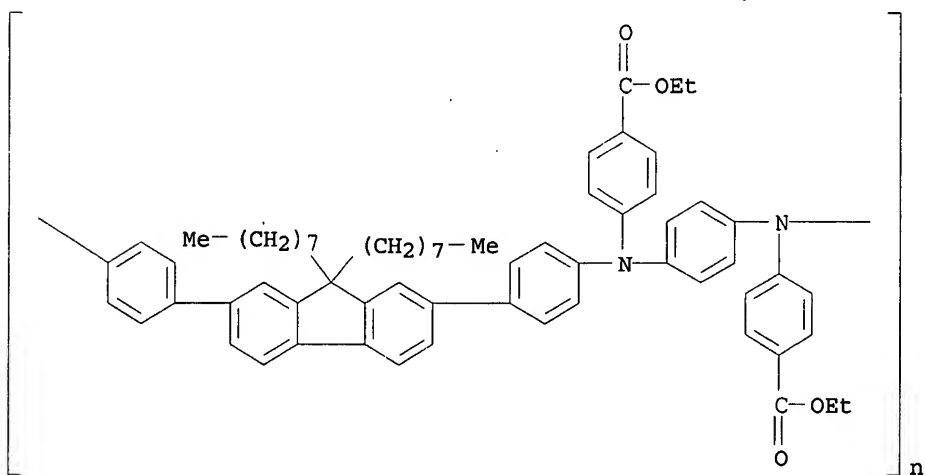
RN 223569-29-7 HCAPLUS

CN Poly[[[4-(4-methylphenyl)imino]-1,4-phenylene[(4-methylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)]



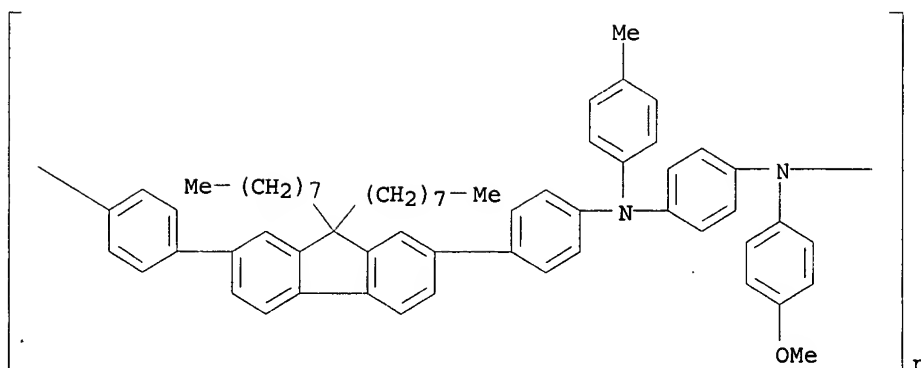
RN 288263-79-6 HCAPLUS

CN Poly[[[4-(ethoxycarbonyl)phenyl]imino]-1,4-phenylene[[4-(ethoxycarbonyl)phenyl]imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)]



RN 288263-90-1 HCAPLUS

CN Poly[[[4-(4-methoxyphenyl)imino]-1,4-phenylene[(4-methylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)]



IC ICM H01L051-20
ICS H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38
IT 198-55-0, Perylene 123863-98-9 123864-00-6 166534-30-1,
MEH-CN-PPV 223569-29-7 288263-28-5 288263-79-6
288263-89-8 288263-90-1 288264-02-8
(organic light-emitting devices with active layers formed from blends for emission color control)

L25 ANSWER 44 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:377697 HCAPLUS

DOCUMENT NUMBER: 133:127040

TITLE: Bright and efficient blue and green light-emitting diodes based on conjugated polymer blends

AUTHOR(S): Palilis, L. C.; Lidzey, D. G.; Redecker, M.; Bradley, D. D. C.; Inbasekaran, M.; Woo, E. P.; Wu, W. W.

CORPORATE SOURCE: Department of Physics and Astronomy, Centre for Molecular Materials, University of Sheffield, Sheffield, S3 7RH, UK

SOURCE: Synthetic Metals (2000), 111-112, 159-163
CODEN: SYMEDZ; ISSN: 0379-6779

PUBLISHER: Elsevier Science S.A.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors report the use of green and blue fluorene conjugated polymers doped with hole transport materials consisting of triarylamine copolymers to fabricate bright and efficient blue and green single-layer light-emitting diodes (LEDs). These blends show enhanced quantum and power efficiency, much higher brightness and current densities and lower turn on and operating voltages compared with undoped devices. Optimized blue emission devices exhibited a maximum brightness of 1550 cd/m², a maximum external electroluminescence quantum efficiency of 0.9 cd/A or 0.4% and a maximum power efficiency of 0.3 lm/W. Optimized green emission devices showed a maximum brightness of 7400 cd/m², a maximum external electroluminescence quantum yield of 0.9% or 2.75 cd/A and a maximum power efficiency of 0.64 lm/W at high brightness.

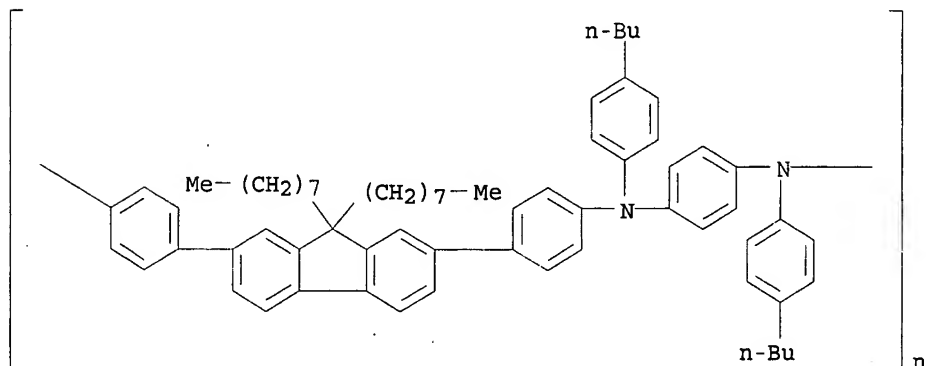
IT 223569-28-6 223569-29-7

(bright and efficient blue and green light-

emitting diodes based on conjugated polymer blends)

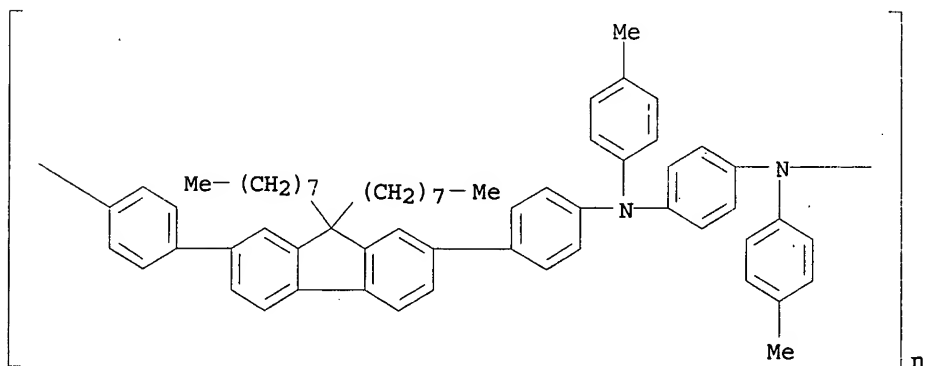
RN 223569-28-6 HCAPLUS

CN Poly[[(4-butylphenyl)imino] -1,4-phenylene[(4-butylphenyl)imino] -
1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl) -1,4-phenylene]
(9CI) (CA INDEX NAME)



RN 223569-29-7 HCAPLUS

CN Poly[[(4-methylphenyl)imino] -1,4-phenylene[(4-methylphenyl)imino] -
1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl) -1,4-phenylene]
(9CI) (CA INDEX NAME)



CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 36

IT 123864-00-6 223569-28-6 223569-29-7

(bright and efficient blue and green light-

emitting diodes based on conjugated polymer blends)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L25 ANSWER 45 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:691147 HCAPLUS

DOCUMENT NUMBER: 131:323070

TITLE: Fluorene-containing polymers and
electroluminescent devices therefrom

INVENTOR(S): Woo, Edmund P.; Bernius, Mark T.; Inbasekaran,
Michael; Wu, Weishi
PATENT ASSIGNEE(S): The Dow Chemical Company, USA
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 4
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|--------------------|
| WO 9954385 | A1 | 19991028 | WO 1999-US7768 | 1999 0409 |
| W: CA, CN, JP, KR, SG RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | | |
| US 6309763 | B1 | 20011030 | US 1998-63615 | 1998 0421 |
| CA 2294485 | AA | 19991028 | CA 1999-2294485 | 1999 0409 |
| EP 988337 | A1 | 20000329 | EP 1999-918475 | 1999 0409 |
| EP 988337 | B1 | 20030604 | | |
| R: DE, FR, GB, IT, NL, SE, FI | | | | |
| JP 2002506481 | T2 | 20020226 | JP 1999-553048 | 1999 0409 |
| PRIORITY APPLN. INFO.: | | | US 1998-63615 | A 1998 0421 |
| | | | US 1997-861469 | A2 1997 0521 |
| | | | WO 1999-US7768 | W 1999 0409 |

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

AB The title copolymer comprises 10-90% I and 10-90% of groups selected from II, III, and IV and mixts.; wherein R1 is H, C1-20 hydrocarbyl or C1-20 hydrocarbyl containing one or more S, N, O, P or Si atoms, C4-16 hydrocarbyl carbonyloxy, C4-16 aryl(trialkylsiloxy) or both R1 may form with the 9-carbon on the fluorene ring a C5-20 cycloaliph. structure or a C4-20 cycloaliph. structure containing one or more heteroatoms of S, N, or O; R2 is

USHA SHRESTHA EIC 1700 REM 4B28

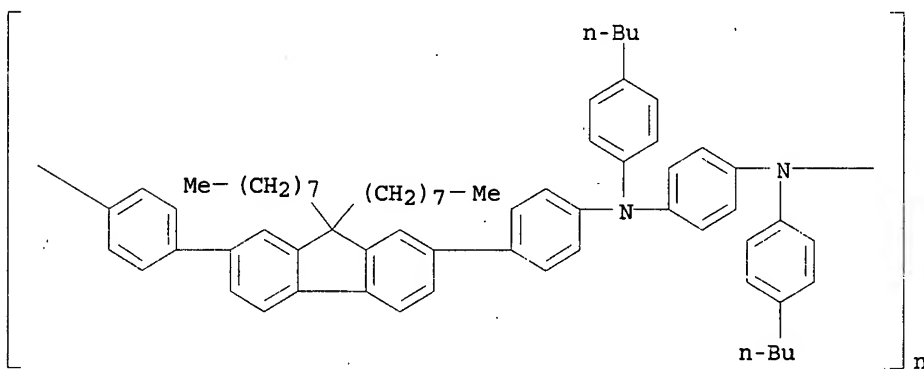
independently in each occurrence C1-20 hydrocarbyl, C1-20 hydrocarbyloxy, C1-20 thioether, C1-20 hydrocarbylcarbonyloxy or cyano; R3 is independently in each occurrence carboxyl, C1-20 alkyl, C1-20 alkoxy or a group of the formula -CO2R4 wherein R4 is a C1-20 alkyl; and a and b are 0 to 3.

IT 223569-28-6 223569-30-0 247922-76-5
247922-78-7

(fluorene-containing polymers and electroluminescent devices therefrom)

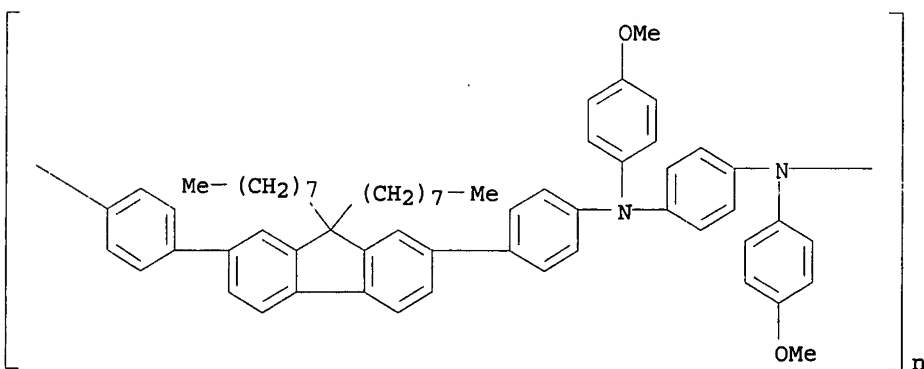
RN 223569-28-6 HCAPLUS

CN Poly[[[4-butylphenyl]imino]-1,4-phenylene[(4-butylphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



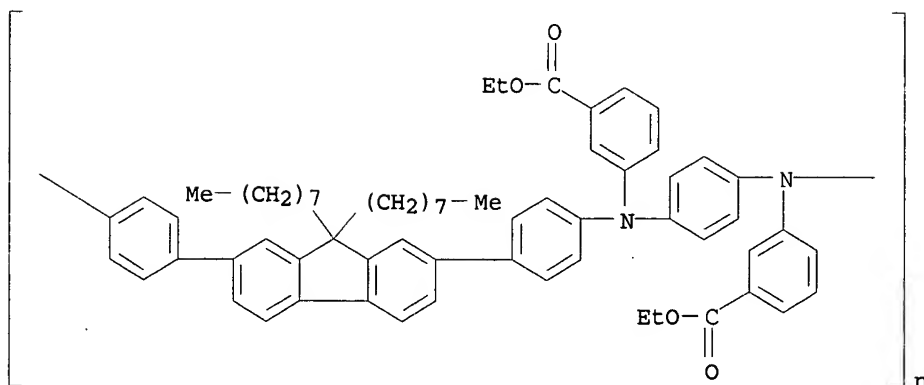
RN 223569-30-0 HCAPLUS

CN Poly[[[4-methoxyphenyl]imino]-1,4-phenylene[(4-methoxyphenyl)imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)

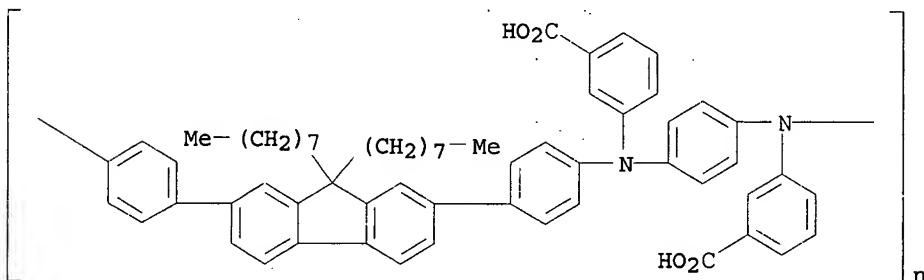


RN 247922-76-5 HCAPLUS

CN Poly[[[3-(ethoxycarbonyl)phenyl]imino]-1,4-phenylene[[3-(ethoxycarbonyl)phenyl]imino]-1,4-phenylene(9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 247922-78-7 HCAPLUS
 CN Poly[[(3-carboxyphenyl)imino]-1,4-phenylene[(3-carboxyphenyl)imino]-1,4-phenylene (9,9-dioctyl-9H-fluorene-2,7-diyl)-1,4-phenylene] (9CI) (CA INDEX NAME)



IC ICM C08G073-02
 ICS C08G061-00; C09K011-06; H05B033-14
 CC 35-5 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 73
 IT 220797-16-0 223569-28-6 223569-30-0
 247922-75-4 247922-76-5 247922-77-6
 247922-78-7 247922-79-8
 (fluorene-containing polymers and electroluminescent devices therefrom)

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 46 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1999:614298 HCAPLUS
 DOCUMENT NUMBER: 131:250201
 TITLE: Electroluminescent devices
 INVENTOR(S): Burroughes, Jeremy Henley; Friend, Richard Henry; Bright, Christopher John; Lacey, David John; Devine, Peter
 PATENT ASSIGNEE(S): Cambridge Display Technology Ltd., UK
 SOURCE: PCT Int. Appl., 71 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent

USHA SHRESTHA EIC 1700 REM 4B28

LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 6
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|------------------|--------------|
| WO 9948160 | A1 | 19990923 | WO 1999-GB741 | 1999 0312 |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| AU 9927402 | A1 | 19991011 | AU 1999-27402 | 1999 0312 |
| EP 1062703 | A1 | 20001227 | EP 1999-907774 | 1999 0312 |
| R: DE, FR, GB, NL | | | | |
| JP 2002507825 | T2 | 20020312 | JP 2000-537271 | 1999 0312 |
| US 6897473 | B1 | 20050524 | US 2000-508367 | 1999 0312 |
| TW 525409 | B | 20030321 | TW 1999-88108773 | 1999 0527 |
| CA 2367388 | AA | 20000921 | CA 2000-2367388 | 2000 0313 |
| WO 2000055927 | A1 | 20000921 | WO 2000-GB911 | 2000 0313 |
| W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| EP 1169741 | A1 | 20020109 | EP 2000-909497 | 2000 0313 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| JP 2002539292 | T2 | 20021119 | JP 2000-605274 | 2000 0313 |

| | | | | |
|------------------------|----|----------|----------------|--------------------|
| US 6861502 | B1 | 20050301 | US 2002-936295 | 2002 0212 |
| US 2004075381 | A1 | 20040422 | US 2003-682204 | 2003 1010 |
| JP 2004247313 | A2 | 20040902 | JP 2004-98825 | 2004 0330 |
| PRIORITY APPLN. INFO.: | | | GB 1998-5476 | A 1998 0313 |
| | | | JP 2000-537271 | A3 1999 0312 |
| | | | WO 1999-GB741 | W 1999 0312 |
| | | | WO 2000-GB911 | W 2000 0313 |
| | | | US 2002-508367 | A1 2002 0103 |

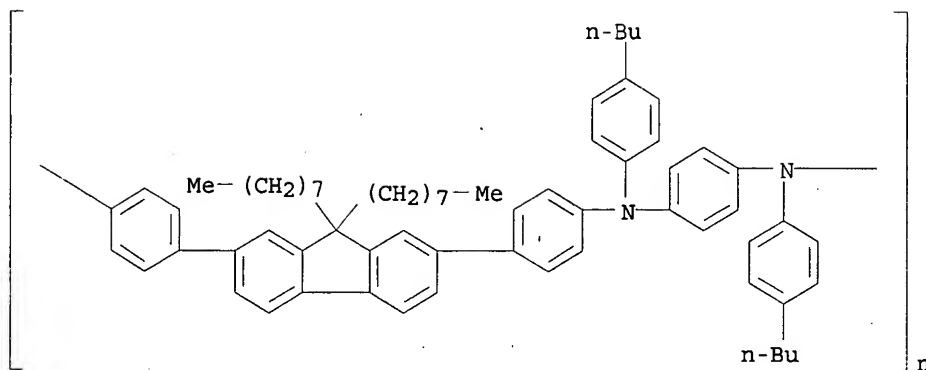
AB Electroluminescent devices are described which comprise a first charge carrier injecting layer for injecting pos. charge carriers; a second charge carrier injecting layer for injecting neg. charge carriers; and a light-emitting layer located between the charge carrier injecting layers and comprising a mixture of a first component for accepting pos. charge carriers from the first charge carrier injecting layer, a second component for accepting neg. charge carriers from the second charge carrier injecting layer, and a third organic light-emitting component for generating light as a result of combination of charge carriers from the first and second components; ≥ 1 of the first, second, and third components forming a type II semiconductor interface with another of the first, second, and third components. The first and the second and/or third components may form a copolymer. Methods for fabricating the devices by sequential formation of the layers are also described.

IT 223569-28-6

(electroluminescent devices with junctions formed between components in the active layer and their fabrication)

RN 223569-28-6 HCAPLUS

CN Poly[[(4-butylphenyl) imino] -1,4-phenylene[(4-butylphenyl) imino] -1,4-phenylene (9,9-dioctyl-9H-fluorene-2,7-diyl) -1,4-phenylene] (9CI) (CA INDEX NAME)

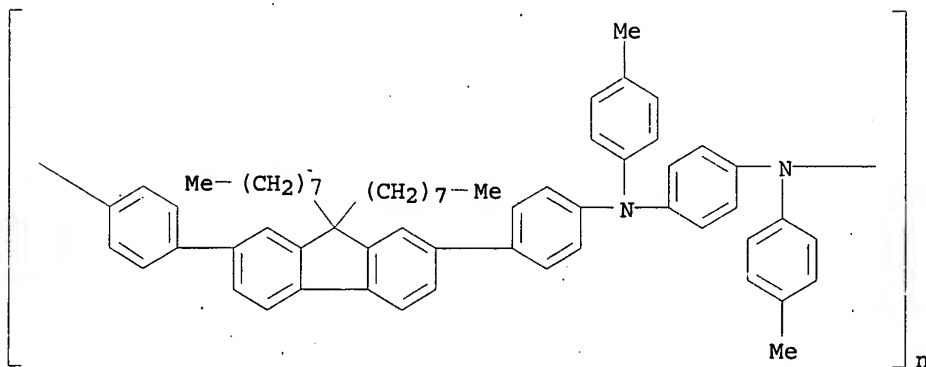


IT 223569-29-7 223569-30-0

(electroluminescent devices with junctions formed
between components in the active layer and their fabrication)

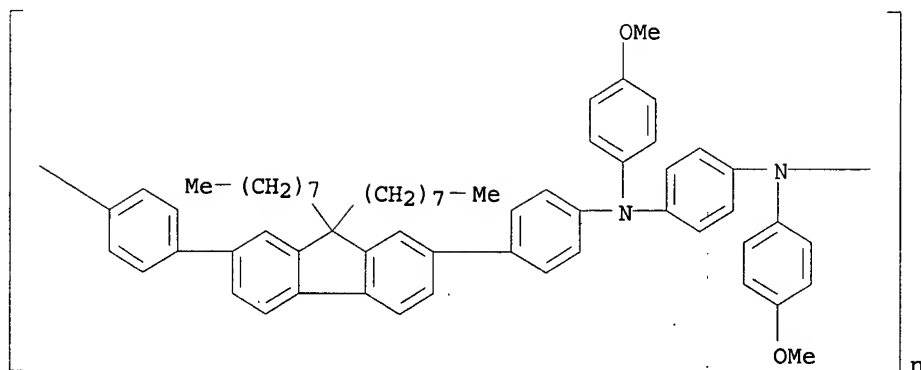
RN 223569-29-7 HCAPLUS

CN Poly[[(4-methylphenyl) imino] -1,4-phenylene [(4-methylphenyl) imino] -
1,4-phenylene (9,9-dioctyl-9H-fluorene-2,7-diyl) -1,4-phenylene]
(9CI) (CA INDEX NAME)



RN 223569-30-0 HCAPLUS

CN Poly[[(4-methoxyphenyl) imino] -1,4-phenylene [(4-
methoxyphenyl) imino] -1,4-phenylene (9,9-dioctyl-9H-fluorene-2,7-
diyl) -1,4-phenylene] (9CI) (CA INDEX NAME)



IC ICM H01L051-20
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 38, 76
 IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 223569-28-6
 (electroluminescent devices with junctions formed
 between components in the active layer and their fabrication)
 IT 96638-49-2, Polyphenylene vinylene 123864-00-6 138184-36-8,
 MEH-PPV 210347-52-7 220797-16-0 223569-29-7
 223569-30-0
 (electroluminescent devices with junctions formed
 between components in the active layer and their fabrication)
 REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L25 ANSWER 47 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1999:490262 HCAPLUS
 DOCUMENT NUMBER: 131:163351
 TITLE: Electrophotographic photoreceptor with surface
 layer containing polymer having arylamine and
 siloxane structures
 INVENTOR(S): Tanaka, Takakazu; Hirano, Hidetoshi
 PATENT ASSIGNEE(S): Canon K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|---------------|
| JP 11212290 | A2 | 19990806 | JP 1998-16777 | 1998 0129 |
| PRIORITY APPLN. INFO.: | | | | JP 1998-16777 |
| | | | | 1998 0129 |

AB The title photoreceptor comprises a conductive support coated with a photosensitive layer of which the surface layer containing a

straight-chain resin which has charge-transporting ability and contains a repeating unit having arylamine and siloxane structures. The photoreceptor shows high mech. strength, photosensitivity, and durability in repeated use.

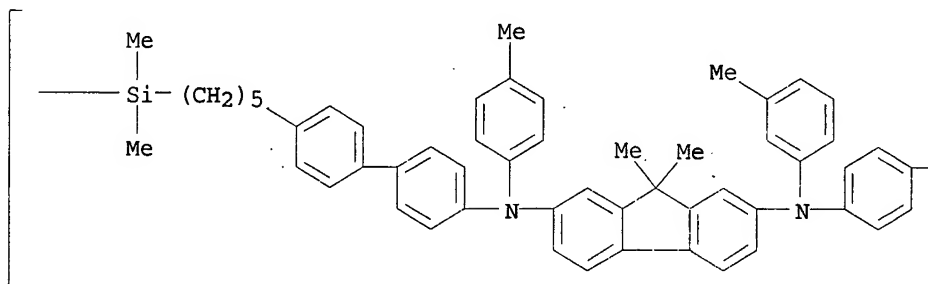
IT 237426-10-7 237426-13-0

(electrophotog. photoreceptor with surface layer containing polymer having arylamine and siloxane structures)

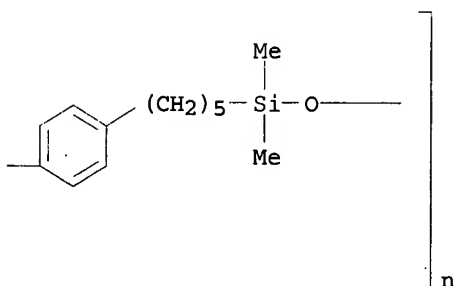
RN 237426-10-7 HCAPLUS

CN Poly[oxy(dimethylsilylene)-1,5-pentanedyl[1,1'-biphenyl]-4,4'-diyl[(3-methylphenyl)imino](9,9-dimethyl-9H-fluorene-2,7-diyl)[(4-methylphenyl)imino][1,1'-biphenyl]-4,4'-diyl-1,5-pentanedyl(dimethylsilylene)] (9CI) (CA INDEX NAME)

PAGE 1-A

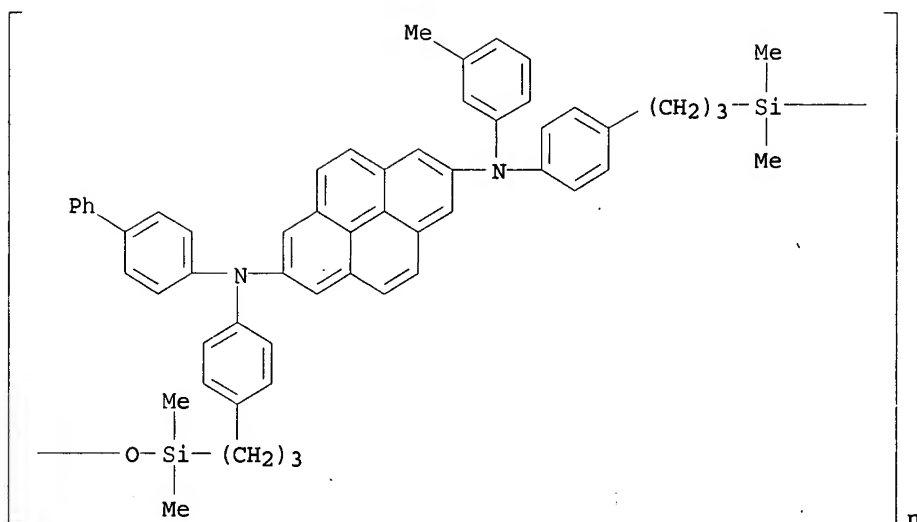


PAGE 1-B



RN 237426-13-0 HCAPLUS

CN Poly[oxy(dimethylsilylene)-1,3-propanediyl-1,4-phenylene([1,1'-biphenyl]-4-ylimino)-2,7-pyrenediyl[(3-methylphenyl)imino]-1,4-phenylene-1,3-propanediyl(dimethylsilylene)] (9CI) (CA INDEX NAME)



IC ICM G03G005-147
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 38
 IT 237426-07-2 237426-08-3 237426-09-4 237426-10-7
 237426-11-8 237426-12-9 237426-13-0 237426-14-1
 237426-15-2 237426-16-3 237426-18-5
 (electrophotog. photoreceptor with surface layer containing polymer having arylamine and siloxane structures)

L25 ANSWER 48 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:758676 HCAPLUS

DOCUMENT NUMBER: 130:73811

TITLE: Styryl-containing polymer, its manufacture, and organic electroluminescent device, electrophotographic photoreceptor, and hole-transporting material using it
 Ueda, Hideaki; Kitahara, Takeshi; Nozaki, Takeshi

PATENT ASSIGNEE(S): Minolta Camera Co., Ltd., Peop. Rep. China
 SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|--------------|
| ----- | ---- | ----- | ----- | |
| JP 10310635 | A2 | 19981124 | JP 1997-119192 | 1997 0509 |
| US 6066712 | A | 20000523 | US 1998-74914 | 1998 0508 |
| PRIORITY APPLN. INFO.: | | | JP 1997-119192 | A |

USHA SHRESTHA EIC 1700 REM 4B28

1997
0509

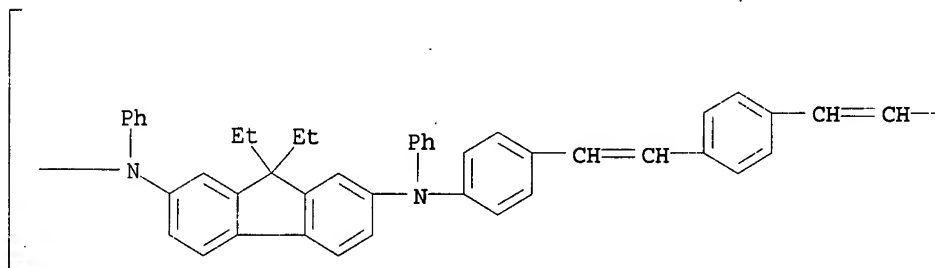
JP 1997-119194

A

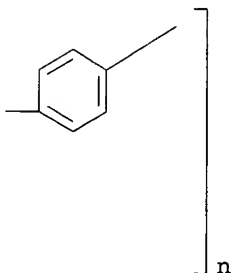
1997
0509

- AB The styryl-containing polymer is represented by
 $[Ar1CH:CHAr2N(Ar3)[Ar5N(Ar6)]mAr4CH:CH]n$ (Ar1-2, Ar4 = arylene;
 Ar5 = arylene, 2-valent condensed polycyclic group; Ar3, Ar6 =
 alkyl, aralkyl, aryl; Ar1-6 may be substituted; m = 0-3; n =
 natural number). The above polymer is manufactured by the reaction
 between a P compound XCH_2Ar1CH_2X [X = PO(OR1)2 or PR23.Y; R1 = lower
 alkyl; R2 = cycloalkyl, aryl; Y = halo] and an aldehyde compound
 $OCHAr2N(Ar3)[Ar5N(Ar6)]mAr4CHO$. The electroluminescent device
 contains the polymer in ≥ 1 organic compound thin layer including
 a light-emitting layer and the photoreceptor contains the polymer
 as a charge-transporting material. The hole-transporting material
 composed of the polymer is also claimed. The styryl-containing
 polymer shows good performance in charge-transporting and optical
 conductivity even after repeated use.
- IT 217632-31-0P
 (styryl-containing polymer as charge-transporting material for organic
 electroluminescent device and electrophotog.
 photoreceptor)
- RN 217632-31-0 HCAPLUS
- CN Poly[(phenylimino)(9,9-diethyl-9H-fluorene-2,7-diyl)(phenylimino)-
 1,4-phenylene-1,2-ethenediyl-1,4-phenylene-1,2-ethenediyl-1,4-
 phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A

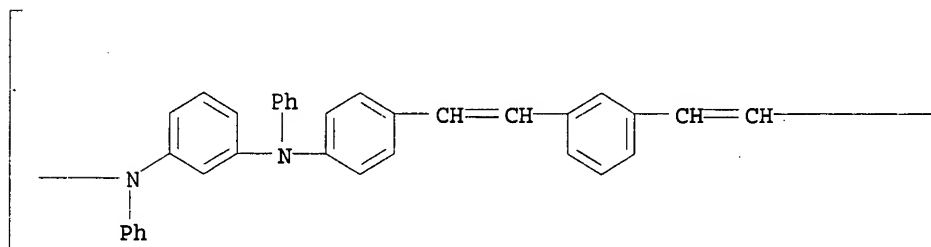


PAGE 1-B

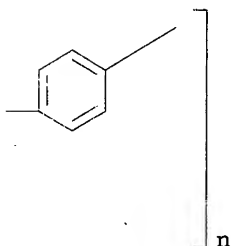


IT 217632-37-6 217632-38-7 217632-39-8
 217632-40-1 217632-41-2 217632-47-8
 217632-48-9 217632-49-0
 (styryl-containing polymer as charge-transporting material for organic
 electroluminescent device and electrophotog.
 photoreceptor)
 RN 217632-37-6 HCAPLUS
 CN Poly[(phenylimino)-1,3-phenylene(phenylimino)-1,4-phenylene-1,2-
 ethenediyl-1,3-phenylene-1,2-ethenediyl-1,4-phenylene] (9CI) (CA
 INDEX NAME)

PAGE 1-A

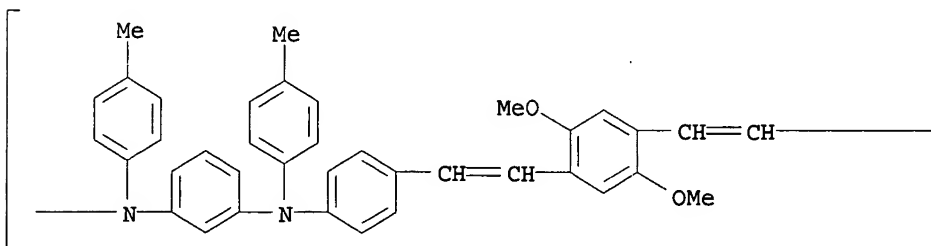


PAGE 1-B

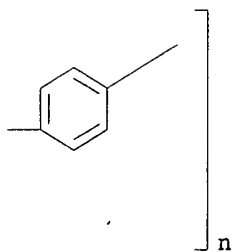


RN 217632-38-7 HCAPLUS
 CN Poly[[(4-methylphenyl) imino] -1,3-phenylene [(4-methylphenyl) imino] -
 1,4-phenylene-1,2-ethenediyl (2,5-dimethoxy-1,4-phenylene) -1,2-
 ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A

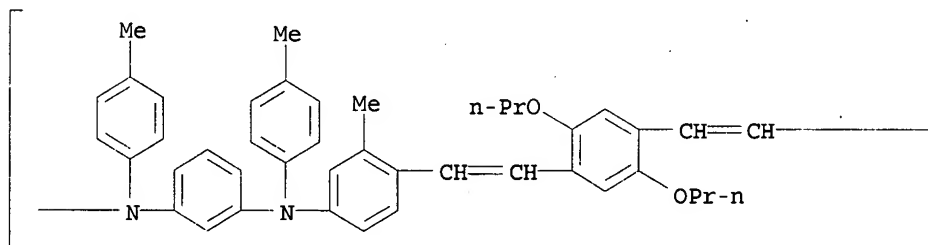


PAGE 1-B

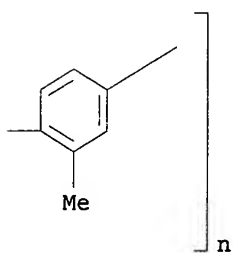


RN 217632-39-8 HCAPLUS
 CN Poly[[(4-methylphenyl) imino] -1,3-phenylene [(4-methylphenyl) imino] (3-methyl-1,4-phenylene) -1,2-ethenediyl (2,5-dipropoxy-1,4-phenylene) -1,2-ethenediyl (2-methyl-1,4-phenylene)] (9CI) (CA INDEX NAME)

PAGE 1-A

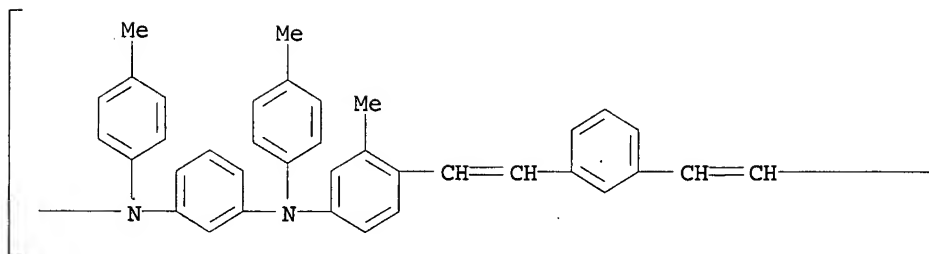


PAGE 1-B

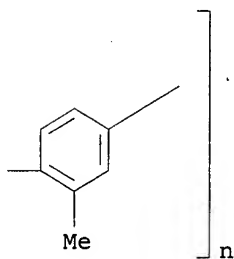


RN 217632-40-1 HCAPLUS
 CN Poly[[(4-methylphenyl) imino] -1,3-phenylene [(4-methylphenyl) imino] (3-methyl-1,4-phenylene) -1,2-ethenediyl -1,3-phenylene -1,2-ethenediyl (2-methyl-1,4-phenylene)] (9CI) (CA INDEX NAME)

PAGE 1-A

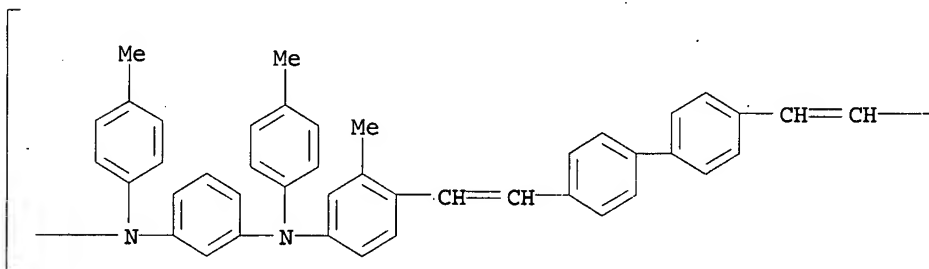


PAGE 1-B

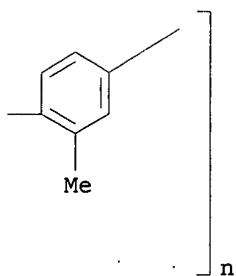


RN 217632-41-2 HCAPLUS
 CN Poly[[(4-methylphenyl)imino]-1,3-phenylene[(4-methylphenyl)imino] (3-methyl-1,4-phenylene)-1,2-ethenediyl [1,1'-biphenyl]-4,4'-diyl-1,2-ethenediyl (2-methyl-1,4-phenylene)] (9CI)
 (CA INDEX NAME)

PAGE 1-A

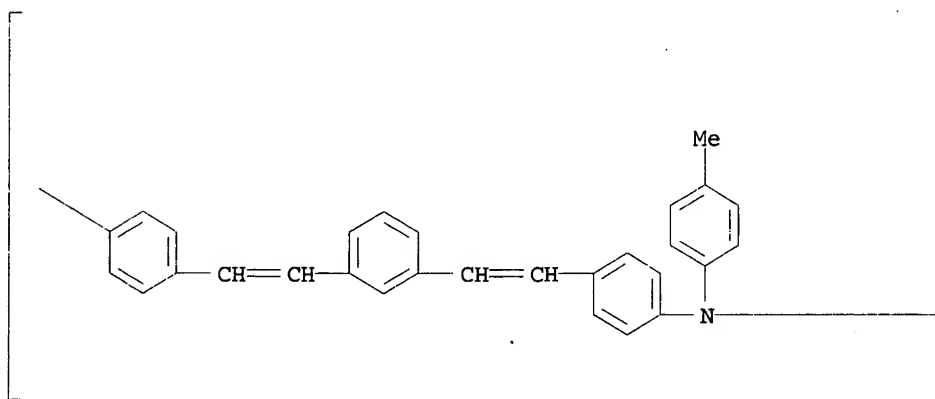


PAGE 1-B

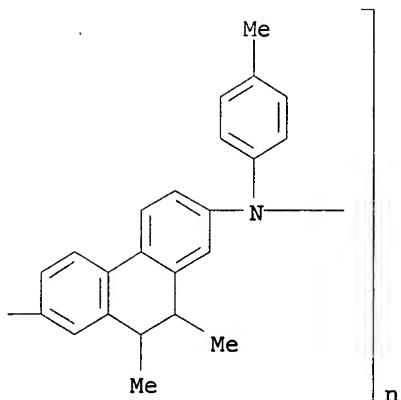


RN 217632-47-8 HCAPLUS
 CN Poly[[(4-methylphenyl) imino] (9,10-dihydro-9,10-dimethyl-2,7-phenanthrenediyl) [(4-methylphenyl) imino]-1,4-phenylene-1,2-ethenediyl-1,3-phenylene-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



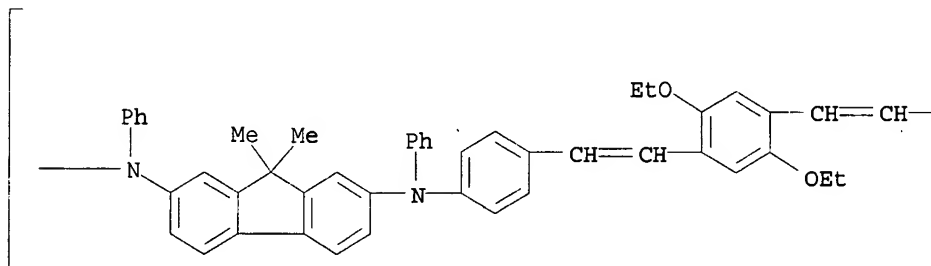
PAGE 1-B



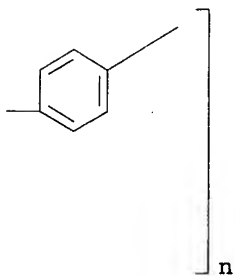
RN 217632-48-9 HCAPLUS

CN Poly[(phenylimino) (9,9-dimethyl-9H-fluorene-2,7-diyl) (phenylimino) - 1,4-phenylene-1,2-ethenediyl (2,5-diethoxy-1,4-phenylene) -1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RN 217632-49-0 HCAPLUS

CN Poly[[(4-methylphenyl) imino] -9,10-anthracenediyl [(4-methylphenyl) imino] (3-methyl-1,4-phenylene) -1,2-ethenediyl (2,5-dipropoxy-1,4-phenylene) -1,2-ethenediyl (2-methyl-1,4-phenylene)] (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

IC ICM C08G061-12
ICS C09K011-06; G03G005-06; H05B033-22
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
Section cross-reference(s): 37, 38, 73
IT 217632-29-6P 217632-30-9P 217632-31-0P
(styryl-containing polymer as charge-transporting material for organic
electroluminescent device and electrophotog.
photoreceptor)
IT 217632-32-1 217632-33-2 217632-34-3 217632-35-4
217632-36-5 217632-37-6 217632-38-7
217632-39-8 217632-40-1 217632-41-2
217632-42-3 217632-43-4 217632-44-5 217632-45-6
217632-46-7 217632-47-8 217632-48-9
217632-49-0
(styryl-containing polymer as charge-transporting material for organic
electroluminescent device and electrophotog.
photoreceptor)

L25 ANSWER 49 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:758655 HCAPLUS

DOCUMENT NUMBER: 130:59045

TITLE: Styryl-containing polymer, its manufacture,
and organic electroluminescent device,
electrophotographic photoreceptor, and
hole-transporting material using it
INVENTOR(S): Ueda, Hideaki; Kitahara, Takeshi; Nozaki,
Takeshi

PATENT ASSIGNEE(S): Minolta Camera Co., Ltd., Peop. Rep. China
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|-------------------|
| ----- | ---- | ----- | ----- | |
| JP 10310606 | A2 | 19981124 | JP 1997-119194 | 1997 0509 |
| US 6066712 | A | 20000523 | US 1998-74914 | 1998 0508 |
| PRIORITY APPLN. INFO.: | | | JP 1997-119192 | A 1997 0509 |

JP 1997-119194

A

1997

0509

AB The styryl-containing polymer is represented by $[\text{CH}_2\text{CH}(\text{Ar}_1\text{CH:CHAr}_2)]_n$ (Ar_1 = arylene; Ar_2 = aryl, condensed polycyclic group, heterocyclic group; Ar_1 and Ar_2 may be substituted; n = natural number). The above polymer is manufactured by (1) the reaction between a P compound $[\text{CH}_2\text{CH}(\text{Ar}_1\text{CH}_2\text{X})]_n$ and an aldehyde compound Ar_2CHO or (2) the reaction between an aldehyde compound $[\text{CH}_2\text{CH}(\text{Ar}_1\text{CHO})]_n$ and a P compound $\text{Ar}_2\text{CH}_2\text{X}$ [$\text{X} = \text{PO}(\text{OR}_1)_2$ or $\text{PR}_2\text{S.Y}$; R_1 = lower alkyl; R_2 = cycloalkyl, aryl; $\text{Y} = \text{halo}$]. The electroluminescent device contains the polymer in ≥ 1 organic compound thin layer including a light-emitting layer and the photoreceptor contains the polymer as a charge-transporting material. The hole-transporting material composed of the polymer is also claimed. The styryl-containing polymer shows good performance in charge-transporting and optical conductivity even after repeated use.

IT 217449-63-3 217449-78-0

(styryl-containing polymer as charge-transporting material for organic electroluminescent device and electrophotog. photoreceptor)

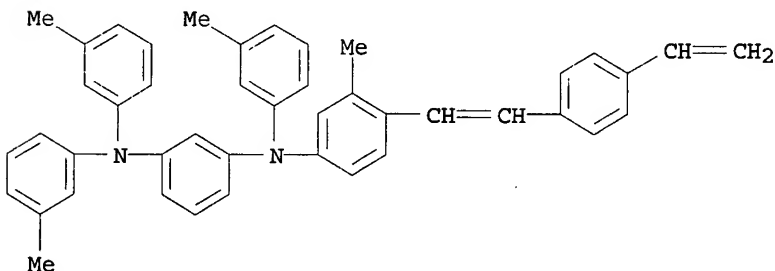
RN 217449-63-3 HCAPLUS

CN 1,3-Benzenediamine, N-[4-[2-(4-ethenylphenyl)ethenyl]-3-methylphenyl]-N,N',N'-tris(3-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 217449-62-2

CMF C44 H40 N2



RN 217449-78-0 HCAPLUS

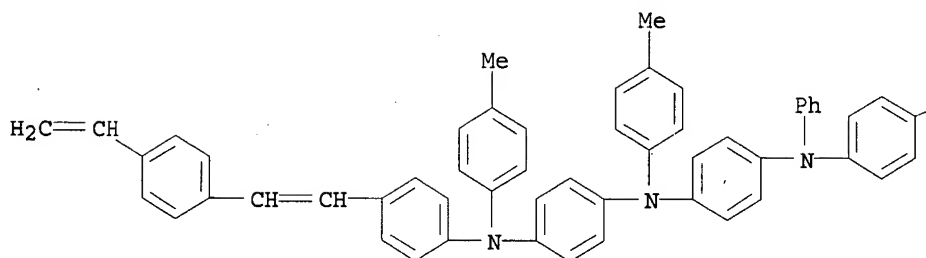
CN 1,4-Benzenediamine, N-[4-[2-(4-ethenylphenyl)ethenyl]phenyl]-N,N'-bis(4-methylphenyl)-N'-[4-[(4-methylphenyl)phenylamino]phenyl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 217449-77-9

CMF C55 H47 N3

PAGE 1-A



PAGE 1-B

Me

IC ICM C08F008-00
 ICS C08F112-14; C08F112-32; C09K011-06; G03G005-06
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 37, 38, 73
 IT 184159-38-4 217449-58-6 217449-61-1 **217449-63-3**
 217449-66-6 217449-69-9 217449-72-4 217449-74-6
 217449-76-8 **217449-78-0** 217449-80-4 217449-82-6
 217449-84-8 217449-86-0 217449-88-2 217449-90-6
 217449-92-8 217449-94-0
 (styryl-containing polymer as charge-transporting material for organic
electroluminescent device and **electrophotog.**
 photoreceptor)

L25 ANSWER 50 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1997:563439 HCAPLUS
 DOCUMENT NUMBER: 127:191351
 TITLE: Synthesis of polymers for hole and electron
 transport materials in organic
 electroluminescent devices
 AUTHOR(S): Son, Jhun Mo; Sakaki, Yuichi; Ogino, Kenji;
 Sato, Hisaya
 CORPORATE SOURCE: Faculty of Technology, Tokyo University of
 Agriculture and Technology, Tokyo, 184, Japan
 SOURCE: IEEE Transactions on Electron Devices (1997),
 44(8), 1307-1314
 CODEN: IETDAI; ISSN: 0018-9383
 PUBLISHER: Institute of Electrical and Electronics
 Engineers
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Styrene-type polymers having tetraphenylbenzidine (TPD) or
 tetraphenylphenyldiaminobenzene unit (PDA) and a oxadiazole unit
 on the side chain were prepared as hole and electron transport
 materials, resp., of an electroluminescent device. The device
 structures employed were [ITO/hole transport layer/Al] (type I),
 or [ITO/hole transport layer/electron transport layer/Al] (type
 II). Type I devices provided c.d. higher than 100 mA/cm² but no

luminescence was observed Type II devices emitted luminescence of about 10 cd/m² at the c.d. of about 170 mA/cm². The emission maximum of these devices were 460 and 530 nm for the device using TPD and PDA, resp.

IT 194354-35-3P

(preparation of styrene derivative polymers for hole and electron transport materials in organic electroluminescent devices)

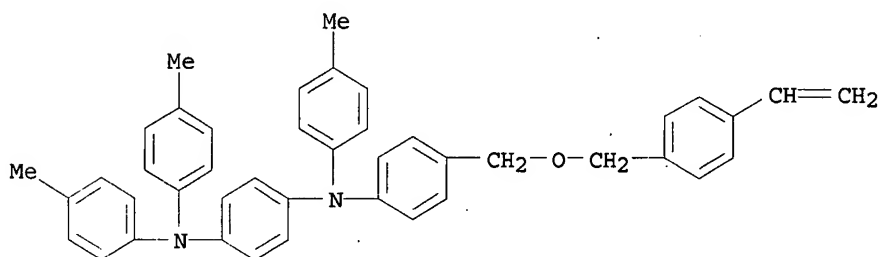
RN 194354-35-3 HCAPLUS

CN 1,4-Benzenediamine, N-[4-[[[4-ethenylphenyl)methoxy]methyl]phenyl]-N,N',N'-tris(4-methylphenyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 194354-34-2

CMF C43 H40 N2 O



CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 73

IT 194354-33-1P 194354-35-3P 194354-36-4P

(preparation of styrene derivative polymers for hole and electron transport materials in organic electroluminescent devices)

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 51 OF 51 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:746286 HCAPLUS

DOCUMENT NUMBER: 126:39392

TITLE: Organic thin-film electroluminescent device

INVENTOR(S): Ito, Juichi; Sato, Hisaya; Hayashi, Takako

PATENT ASSIGNEE(S): Toppan Printing Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|--------------|
| JP 08259935 | A2 | 19961008 | JP 1995-65611 | 1995 0324 |
| JP 3646339 | B2 | 20050511 | | |

USHA SHRESTHA EIC 1700 REM 4B28

PRIORITY APPLN. INFO.:

JP 1995-65611

1995

0324

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT
*

AB An organic thin-film electroluminescent device, suited for use in optical displays, comprises a multilayer structure including an organic light-emitting layer and a hole injection/transport layer containing a compound represented by I (G1 = CH or N; G2, G3 = H, C1-4 alkyl, alkoxy, dialkylamino, Q1, Q2, Q3, Q4, a group containing ≥ 1 benzene, naphthalene, anthracene, and perylene rings, benzene or naphthalene rings condensed with the Ph group in I; R = H, C1-4 alkyl, alkoxy, and dialkylamino).

IT 184159-36-2

(organic thin-film electroluminescent device)

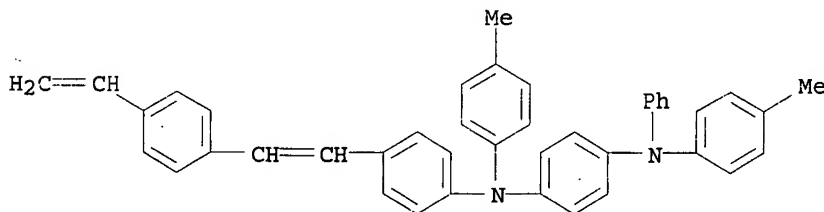
RN 184159-36-2 HCAPLUS

CN 1,4-Benzenediamine, N-[4-[2-(4-ethenylphenyl)ethenyl]phenyl]-N,N'-bis(4-methylphenyl)-N'-phenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 184159-35-1

CMF C42 H36 N2



IC ICM C09K011-06

ICS H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74, 76

IT 184159-34-0 184159-36-2 184159-38-4

(organic thin-film electroluminescent device)